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Educational Platforms: Key Aspects for Assessment, Selection, and Effective Use in Latin America and the Caribbean

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1. Introduction



Digital transformation has taken place in Latin America and the Caribbean at an accelerated but unequal pace. According to the GSMA 2025¹ report, by late 2024, approximately 64% of the Latin American population used mobile Internet services. With the inclusion of 75 million people in five years, growth has been rapid. Yet many people are still being left behind in this process. Digital inclusion is an important way for people to take part in the region's economy, through access to information and through communications and public or financial services, among other ways that are now consolidated in digital formats.

In education, technology can deliver considerable benefits in terms of scale, access, and quality of services, in addition to the development of citizens' digital competences – an essential factor for effective participation in the continent's digital transition. Numerous countries have made important efforts to implement technologies at scale by investing in computers, connectivity, and teacher training, and the region has been able to advance, albeit in a sluggish and visibly unequal way.

An assessment of Education Management and Information Systems (EMIS), conducted in 2021 by the Inter-American Development Bank (IDB) and covering 16 educational systems in the region, found that the average overall level of EMIS development was still incipient.² At the level of schools, access to connectivity and devices is quite unequal. Many schools do not yet have Internet connectivity for pedagogical uses, and the computer-per-student rate varies drastically among countries within the region and types of schools within the same country. According to the ERCE 2019 study, the average percentage of schools with Internet access in the LAC region was 61.3%, including countries with extremely high access levels, such as Costa Rica with 97.8%, and countries with extremely low levels, such as Nicaragua with only 14.5%.³

Bearing this context in mind, the present technical note addresses a central topic of digital transformation in education: the contribution of technology to improving student learning through the use of educational platforms in the classrooms. Numerous international studies have demonstrated that educational platforms can become key allies for students and teachers, and lead to positive learning outcomes. However, studies also show that the use of educational platforms is not always positive. Positive outcomes hinge on two sets of factors: (i) the quality and pertinence of the adopted educational platforms; and (ii) the way in which they are used.⁴ The utilization of platforms at the systemic level faces the additional challenge of their large-scale implementation, that is, the challenge of their simultaneous adoption by several schools and classrooms.

The objective of this technical note is to help Latin American and Caribbean educational systems interested in implementing educational platforms in their schools, by offering clear guidance structured into two parts: first, a conceptual framework on key issues related to assessing and selecting pertinent, quality educational platforms; and second, a set of recommendations related to essential aspects for the implementation of educational platforms at the system level. It does not purport to present a standard implementation model that could be successful in any situation. Instead, it seeks to describe the relevant elements and present examples of ongoing implementation processes in the region. Its aim is to contribute so that each system may look for a way that it considers adequate for its own context and continue improving it over time.

¹ GSMA (2025)

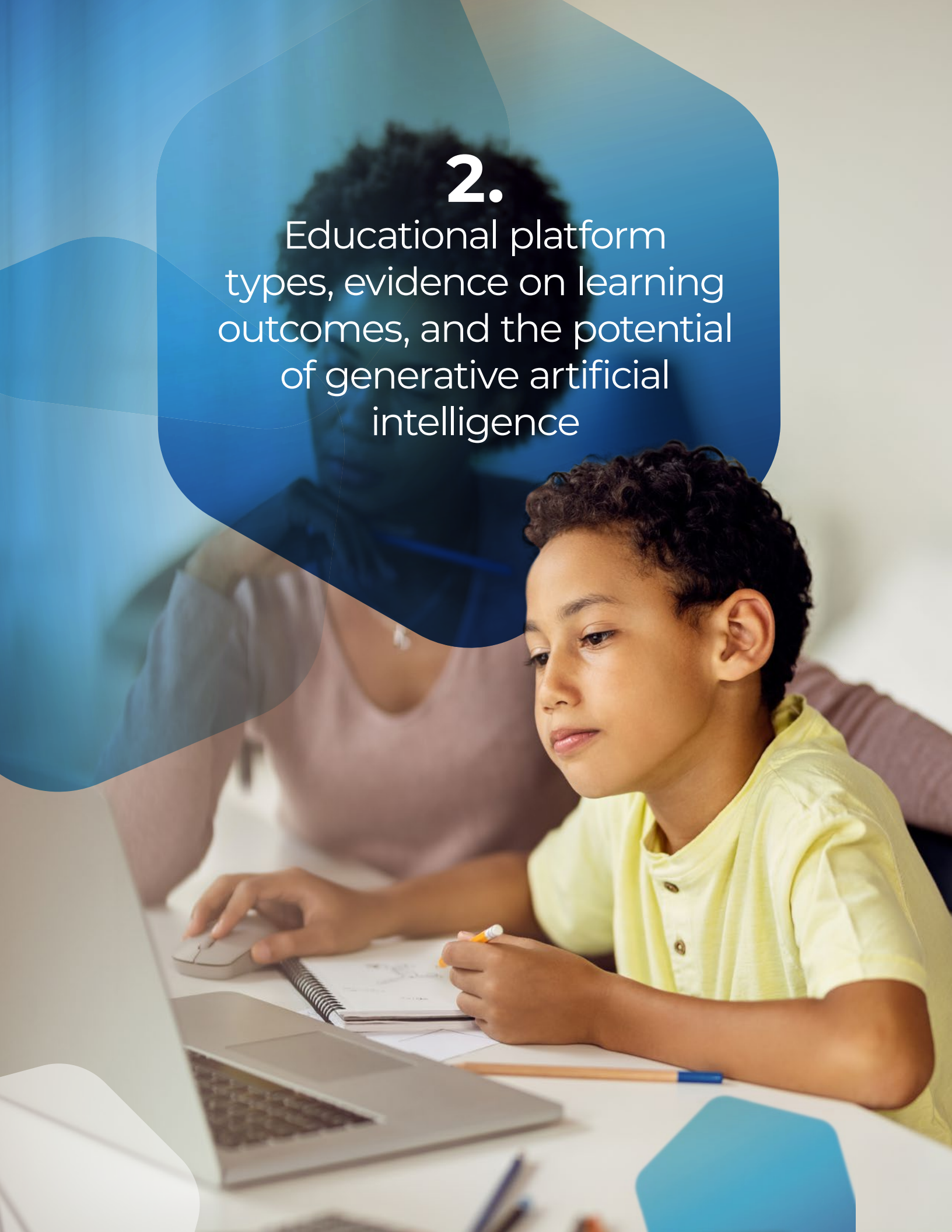
² Arias Ortiz et al. (2021)

³ Arias Ortiz et al. (2024); CIMA (n.d.)

⁴ CIEB (2025); UNESCO (2024a); Rajasekaran et al. (2024); Arias Ortiz et al. (2025).

2.

Educational platform types, evidence on learning outcomes, and the potential of generative artificial intelligence



● The different types of educational platforms

Education Management and Information Systems (EMIS) may provide support to the entire set of operations of public educational systems, enabling key processes to be managed in an integrated and efficient way at the central, regional, and school levels. EMIS comprise processes such as infrastructure and equipment, educational institutions, students and learning trajectories, human and financial resources, and strategic management tools, among others.⁵ They may help arrange key educational management data, such as class structuring processes for teachers and students, attendance and absence records, class schedules, test grades and school incidents, among other types of data. On the other hand, digital educational resources focus specifically on the teaching and learning process and may be divided into three types: (i) digital content; (ii) digital tools; and (iii) educational platforms. Content and tools may either be used independently or be integrated into – to become part of – aggregator platforms, that is, educational platforms. These platforms may be divided into three large groups: (i) content repositories; (ii) learning management systems (LMS); and (iii) learning platforms, as shown in the following tables.⁶

DIGITAL EDUCATIONAL RESOURCES		
Digital resources (software) provide direct support to students and teachers throughout the teaching and learning process.		
DIGITAL CONTENT	DIGITAL TOOLS	EDUCATIONAL PLATFORMS
Interactive or not interactive; created or used with an intentional pedagogical purpose. For instance: videos, animations, audio content, and simulators.	Technologies aimed at supporting specific school processes by optimizing or facilitating them. For instance: assessment tools, tutoring tools, and collaborative text production tools.	Robust coordinated structures that may connect different digital tools and types of content with the aim of facilitating the teaching and learning process.

EDUCATIONAL PLATFORMS		
CONTENT REPOSITORIES	LEARNING MANAGEMENT SYSTEMS (LMS)	LEARNING PLATFORMS
Platforms that gather and systematize content aggregated through indexation and search systems, which may be accessed, downloaded or used in other platforms.	Online teaching and learning platforms that enable the creation of spaces for distance learning or hybrid teaching, including content management features, activities, and evaluations.	These platforms include previously structured pedagogical proposals and sequences with content and evaluations that may be either used with the intermediation of teachers or directly used by the students. Customized learning platforms can adapt pedagogical sequences in different ways based on the interactions with each student.

⁵ Arias Ortiz et al. (2021); Giambruno et al. (forthcoming).

⁶ Adapted from CIEB (2025).

This note focuses on educational platforms and, more specifically, on learning management environments and learning platforms. Yet, it does not exclude other types of digital educational resources that are helpful for classroom practice. Learning management environments are relevant since they directly connect to school management platforms to gather necessary data, and they may also be connected to a diversity of learning platforms and content repositories to serve as single-entry aggregating environments for students.

In turn, learning platforms have proved effective in promoting student learning, since they are more directly connected to the content and competencies of school curricula.⁷

Educational platforms are aggregators by nature and may integrate different tools and types of digital content. Three examples of educational platforms are presented below, and it will be shown how these platforms incorporate different types of content and digital tools to accomplish their aims and provide support to the teaching and learning process:

Learning Management Systems (LMS), illustrated

PLATFORM	LEARNING MANAGEMENT SYSTEM	PLATFORM THAT ENABLES CONTENT SHARING, ACTIVITIES AND FEEDBACK BETWEEN STUDENTS AND TEACHERS
Integrated digital tools	Automatic test tools	Question banks connected to content and skills that teachers can share with students and generate automatic feedback.
	Authorship, collaboration, and productivity tools	Collaborative text editor, spreadsheet and graph editor, presentation editor, video editor, research tool.
	File sharing and communication tools	An online environment where students and teachers can share files and interact.
Integrated digital content	Digital educational objects	Digital content, including videos, animations, simulations, and images, among others.

Learning Platform, illustrated

PLATFORM	READING LEARNING PLATFORM	A PLATFORM THAT MAKES DIGITAL BOOKS AVAILABLE WITH SUPPORT RESOURCES TO PROMOTE READING AND ASSESSMENT AND DEEPENING ACTIVITIES
Integrated digital content	Digital books	Books in digital format with interactive functions that assist in reading, such as text marker and glossary.
Integrated digital tools	Assessment tools	Reading fluency and comprehension assessments for each text, linked to curriculum skills.
	Authorship and collaboration tools	Multimedia editor (using videos and presentations) for productions related to studied texts, and file sharing with classmates.

⁷ Rajasekaran et al. (2024)

Adaptive Learning Platform, illustrated

PLATFORM	ADAPTIVE LEARNING PLATFORM	A PLATFORM THAT STRUCTURES CUSTOMIZED MATHEMATICS LEARNING TRAJECTORIES BASED ON STUDENTS' INTERACTIONS WITH THE PLATFORM
Integrated digital tools	Educational games	Gaming activities with stimulating challenges that may become easier or more difficult according to the performance of students, using an artificial intelligence algorithm.
	Tutoring tool	Helps provide clarifications on student doubts using artificial intelligence or remote access through video or chat.

Educational platforms are now widely available around the world, including in Latin America and the Caribbean. The closing of schools during the COVID-19 pandemic in 2020 and 2021 forced most governments to mobilize and offer alternatives in terms of distance-learning content or activities. A mapping exercise conducted by EdTech Hub in 2023 in 184 countries⁸ revealed that 65% of the countries had more than one national educational platform. The most common types of platforms were: (1) content repositories that aggregate content from diverse sources; and (2) learning management systems with different types of courses. However, only 33% of all platforms included content with which students could interact. This finding is at odds with the academic research showing the positive impact of learning platforms in which students interact with pedagogical sequences that include content, activities, and tests, as will be described below.

The contribution of educational platforms for teaching and learning outcomes

Technology, broadly speaking, may contribute to the attainment of educational outcomes by improving (i) resource efficiency, allocation and management; (ii) grade repetition and pass rates, while expanding access to educational resources for students in remote regions; and (iii) the learning outcomes attained through best pedagogical practices and customized student support.⁹ Several studies in recent decades have shown that educational platforms can bolster student motivation, engagement and academic performance in different contexts.¹⁰ In turn, educational games have contributed to learning based on students' curiosity, engagement, and creativity. Digital resources expand the possibilities of access to content and teaching and learning methodologies to remote places when an enabling infrastructure is in place. Educational platforms that incorporate effective teaching and learning principles into their design have made significant contributions to student learning. At schools, educational technologies have been found to be particularly effective in classrooms with many students and different learning levels, by enabling each student to advance at their own pace. The uses of educational platforms are quite far-reaching and include countless possibilities. Two research areas have found particularly consistent outcomes after using learning platforms: language development, particularly during the literacy phase, and the development of mathematical competencies.¹¹

In the field of language, different studies have identified a consistent learning benefit from the use of digital

⁸ Rui et al. (2023)

⁹ Arias Ortiz et al. (2025)

¹⁰ CIEB (2025); Rajasekaran et al. (2024); Dahl-Leonard et al. (2024)

¹¹ Rajasekaran et al. (2024); Arias Ortiz et al. (2025)

platforms for the literacy process.¹² Many of these studies highlight specific benefits in the case of students with learning difficulties. The educational platforms used usually address multiple literacy components and, most commonly, those related to early reading competencies such as decoding, phonological awareness, fluency, and reading comprehension. On the other hand, research on the use of digital books throughout the school trajectory has not identified comprehension benefits compared to printed books, except in cases in which digital reading is accompanied by interactive resources. The most effective interactive resources are those directly aimed at pedagogical enrichment, such as visual and interactive complements, synthesis, questions along the texts, interactive glossaries and monitoring and evaluation elements with quick feedback, among others.¹³ Also in the field of language, educational platforms have been valuable for the production of texts, either by facilitating text editing and sharing or by automatizing part of the essay grading process, while helping teachers provide customized student support.¹⁴

In mathematics, the perceived effects of technologies include students' enhanced motivation to begin activities, as well as their engagement in continuing their studies. Learning impacts have also been reported for students who had difficulties in the subject. A longitudinal study conducted through an adaptive math platform in schools in Uruguay has shown an increase in math learning levels, particularly among students of the lowest socioeconomic strata.¹⁵ Different features of educational platforms for mathematics have contributed to learning, including dynamic math resources that provide support to the successful handling and comprehension of mathematical concepts; interactive systems that direct and structure study activities and problem-solving skills; platforms with tests and feedback that prompt students to try different paths, correct mistakes, and advance at their own rhythm; study platforms with artificial intelligence activities that enable customized, interaction-based answers, generating specific recommendations according to each student's needs and interests; and gaming or gamified platforms that engage students through increasingly demanding challenges, while stimulating individual self-regulation by enabling visibility and incentives for advancing with the studies. Some studies also show that math platforms can stimulate collaboration among students whenever students use them for this purpose.¹⁶

Nonetheless, the features of educational platforms are not sufficient by themselves to generate positive outcomes. Without the necessary pedagogical coherence, interventions focused mostly on hardware expansion and platform connectivity have consistently failed to produce learning benefits, despite considerable financial investments.¹⁷

Some factors related to the use of educational platforms are essential for platforms to deliver their potential consistently. Platforms work best when students directly and independently use them. At the same time, teachers play an essential role by planning activities and following up on their classroom uses. One of the main factors highlighted by the specialized studies for its ability to increase the effectiveness of educational platforms is the provision of teacher training on their use. Platforms work more effectively when they are integrated into and complement teachers' pedagogical practice, and less effectively when they are used as lesson replacements. Further, they are more effective when used as a complement to significant activities without technological resources (more than when they are used all the time), and when they produce interactions between students and teachers and stimulate collaboration among students.¹⁸

¹² Dahl-Leonard et al. (2024)

¹³ Berkeley et al. (2015); Clinton-Lisell (2021)

¹⁴ Bui and Barrot (2025); Ferman et al. (2021); Zhai and Ma (2022)

¹⁵ Perera and Aboal (2019)

¹⁶ CIEB (2025); Benavides-Varela et al. (2020); Fadda et al. (2021)

¹⁷ Barrera-Osorio and Linden (2009); Beuermann et al. (2015); Cristia et al. (2017).

¹⁸ UNESCO (2024a); Rajasekaran et al. (2024); Arias Ortiz et al. (2025); CIEB (2025).

Generative artificial intelligence: the new frontier of educational platforms

Educational platforms that integrate artificial intelligence elements such as automated data analysis and predictive analysis have effectively contributed to improving learning outcomes. Such effectiveness derives from their capacity to differentiate between types of content and activities based on each student's knowledge level, thereby enabling customized learning trajectories. Platforms have been particularly beneficial in cases of classrooms comprising numerous students with diverse proficiency levels. Another widely used AI application with positive outcomes in recent decades is the automated grading of open-ended questions.¹⁹

More recently, the technological advances of generative artificial intelligence have opened new paths for educational platforms that are already being used and evaluated in schools. In broad terms, this is related to the confluence of three factors: their extremely fast processing of large datasets; the generation of content such as texts, images, videos, or sounds; and a text and audio interactive interface available to the public at large. First, the integration of this new technology into educational platforms expands their potential support for teaching and learning processes. Second, it can carry out routine teaching tasks, thus freeing up part of teachers' time for more complex activities and human interaction. Third, it may serve as a virtual teaching assistant and help produce lesson plans based on curriculum objectives or adapt them to specific contexts. Fourth, it may provide support through automated reading fluency grading and by detecting plagiarism. Furthermore, integrating generative artificial intelligence may serve to provide direct support to students through chatbot tutoring assistance with customized guidance on their questions, research support, and mentorship for drafting and revising written work and projects, among other possibilities.

On the other hand, the use of generative artificial intelligence in education has risks and uncertainties. For instance, it may reproduce misconceptions, biases and inaccuracies based on the dataset used to train the systems; or it may lead to the risk of excessive student reliance on AI support and a reduction of the necessary cognitive effort for learning; or the AI-based emulation of human emotions, especially among children and adolescents, which may confuse them and generate as yet unmapped emotional consequences; or give rise to issues related to data privacy and inappropriate content.²⁰ Since this technology is still quite recent and little researched, and due to the risks that have been mapped to date, its use in education must be introduced with caution and close support from educators.

¹⁹ Arias Ortiz et al. (2025); CIEB (2025); Zhai and Ma (2022); Ferman et al. (2021)

²⁰ CIEB (2025); Rajasekaran et al. (2024); Arias Ortiz et al. (2025); Kosmyna et al. (2025); Stanford Accelerator for Learning (n.d.).

3.

A framework for educational platform assessment



● Developing an analytical framework

A fundamental factor for the implementation of educational technologies is the choice of which technologies to adopt. It is essential for school networks to have technical and objective criteria for selecting educational technologies, both for the adoption of a single educational platform for the entire network, and for curating a set of platforms considered appropriate for selection at school level. Therefore, this note presents a multidimensional analytical framework for educational networks, together with well-defined criteria and guiding questions that may be used for assessing and comparing educational platform options.

The production of this conceptual framework draws largely on the study conducted by the United Kingdom's Department for Education in 2023, which assessed 74 educational platform frameworks and standards either established or revised by different countries over the previous decade.²¹ The parameters assessed by the studied frameworks and standards can be grouped into three overarching areas:

1. The design of quality educational technologies: the educational design elements considered important for the provision of quality education, either in relation to platform usability or pedagogical design aspects;
2. The strategic implementation of educational technologies in schools: the way in which the educational technologies' implementation must occur so that these technologies may be effectively used at schools;
3. Evidence related to the effectiveness of educational technologies: the available evidence for affirming that educational platforms are effective.

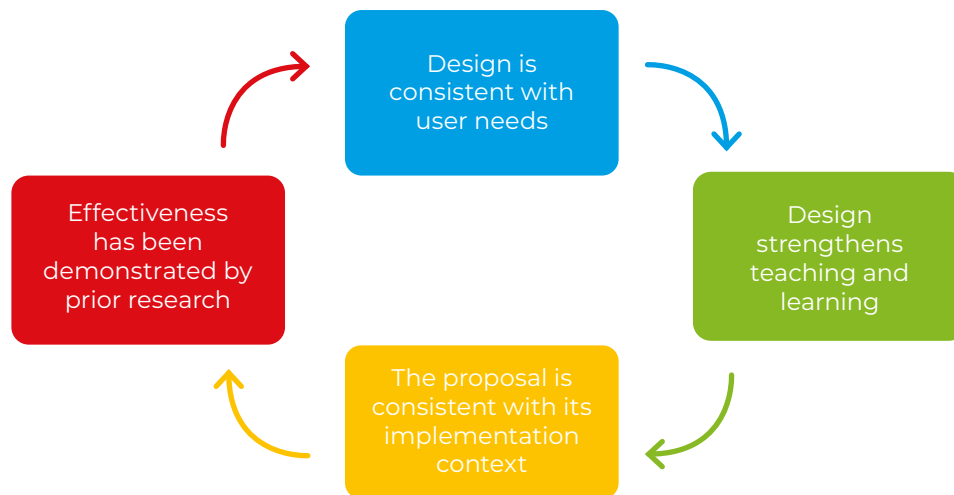
This framework also incorporates the dimensions of the EdTech for Good Framework developed by UNICEF, the Ministry for Foreign Affairs of Finland, Arm and the Asian Development Bank (ADB) for assessing the security, scalability, and impact potential of educational platforms.²²

● The four dimensions of this analytical framework

After examining the above-mentioned references and the context of their applicability, this technical note proposes the following framework for assessing and selecting educational platforms. The framework is structured into four central dimensions that enable assessing the following aspects: (1) whether the design is consistent with users' needs; (2) whether the design strengthens teaching and learning; (3) whether the proposal is consistent with its implementation context; and (4) whether its effectiveness has been demonstrated by prior research.

²¹ Foster et al. (2023)

²² Learning Cabinet (n.d.).



Source: Created by the authors.

Each dimension, in its turn, unfolds into four to five criteria, as shown by the table below:

DESIGN IS CONSISTENT WITH USER NEEDS	DESIGN STRENGTHENS TEACHING AND LEARNING
1. Adequacy and alignment of content and activities 2. Attention to diversity, accessibility, and inclusion 3. Ease of access and platform use for pedagogical practice 4. Flexibility for adapting content and learning sequences 5. Security and ethics in data management and artificial intelligence	1. Content and activities are attractive and meaningful to students 2. Consistent instructional design with the capacity to deepen the learning experience 3. Interactivity and feedback prompt learner autonomy 4. It enables learning customization and collaboration 5. It facilitates formative assessments, planning and teaching activities
THE PROPOSAL IS CONSISTENT WITH ITS IMPLEMENTATION CONTEXT	EFFECTIVENESS HAS BEEN DEMONSTRATED BY PRIOR RESEARCH
1. Adequate costs and contract models 2. The technology is up-to-date and adjusted to the existing infrastructure 3. It enables integration with other digital systems and educational databases 4. It offers data visualization for learning monitoring 5. It offers teacher training and user support	1. It demonstrates how its design is coherent with educational science 2. It was implemented at scale in similar contexts 3. Surveys highlight the educational platform's positive aspects 4. Experimental or quasi-experimental external assessments demonstrate the platform's effectiveness

Source: Created by the authors.

Guiding questions and guidance for the framework's use

The proposed analytical framework offers a comprehensive and adaptable tool for use by educational networks. Since it is a multidimensional framework, the establishment of a multidisciplinary committee of professionals from the educational policy's pedagogical, curricular, technological, and management fields is recommended.

To facilitate and standardize the analysis of platforms, a set of guiding questions was developed to be answered according to each analytical criterion of the conceptual framework. It is recommended that the questions be answered based on a scale ranging from 1 to 4, as shown in the table below:

SCORE	RATING
4	Strongly agree
3	Partially agree
2	Partially disagree
1	Strongly disagree

Source: Created by the authors.

This scale enables quantifying the educational platforms' assessment (by analyzing them in accordance with the four dimensions) to identify whether a platform is suitable for use in the context of the educational network concerned. It also enables comparing different options to facilitate the selection of platforms with higher scores, above all in relation to the criteria and dimensions that are relevant within the context of the educational network or of individual schools.

The following tables provide additional details about the guiding questions recommended in connection with each dimension and criterion of the conceptual framework.

DIMENSION 1			DESIGN IS CONSISTENT WITH USER NEEDS
Criterion 1.1	Adequacy and alignment of content and activities	Are the content and activities correct, adjusted to the age group and free from bias or advertising? Are the content and activities aligned to the curriculum? Are they structured according to the curriculum and school calendar?	
Criterion 1.2	Attention to diversity, accessibility, and inclusion	Does it offer features for persons with disabilities, such as video subtitles, text to speech, text enlargement, and contrast? Is it compatible with assistive technologies? Can it be adapted to the needs of students in vulnerable contexts or experiencing learning lags? Is it adapted, or can it be adapted to contexts of bilingual multicultural education?	
Criterion 1.3	Ease of access and platform use for pedagogical practice	Does it require a password and installation to enable access? Is it necessary to be online to use it? Is it easy to find what is searched for teaching practice purposes? Is the navigation clear and is usage intuitive? Does it offer tutorials to assist users?	
Criterion 1.4	Flexibility for adapting content and learning sequences	Is there enough flexibility for selecting what is applicable, as well as for changing the content's order? Is it possible to change content and activities, or to develop new activities?	

DIMENSION 1 DESIGN IS CONSISTENT WITH USER NEEDS		
Criterion 1.5	Security and ethics in data management and artificial intelligence	Does it include clear terms of security, privacy, and ethics in connection with users' data, and is it compliant with data protection regulations related to children and adolescents? Does it contain a cybersecurity program to protect data integrity, confidentiality, and accessibility? Can it disclose the datasets on which its AI was trained, and how it ensures the quality of the information produced by its algorithms? Does it contain mechanisms to protect the safety and well-being of children and adolescents in their interactions with artificial intelligence, or, if applicable, in interactions among people using the platform?
DIMENSION 2 DESIGN STRENGTHENS TEACHING AND LEARNING		
Criterion 2.1	Content and activities are attractive and meaningful to students	Are the content and activities meaningful and attractive to students? Does the learning environment engage students in their learning? Does it offer multiple formats for interacting with the content?
Criterion 2.2	Consistent instructional design with the capacity to deepen the learning experience	Is there a clear instructional design and pedagogical strategy? Do students progress according to a clear, previously established plan? Can knowledge and skills be reinforced and deepened? Does it enable open and creative projects or activities?
Criterion 2.3	Interactivity and feedback prompt learner autonomy	Does it include interactive activities for students? Do students receive instant feedback on their progress, mistakes, and successes throughout their learning? Can students navigate and progress autonomously?
Criterion 2.4	It enables learning customization and collaboration	Can students make choices according to their interests and preferences? Are automated customization mechanisms based on the interactions between students and the platform available? Does every student have the chance to study according to their own level, and do they receive customized support in accordance with their needs? Does the platform facilitate student collaboration?
Criterion 2.5	It facilitates formative assessments, planning and teaching activities	Will the platform's automation save time and facilitate the teaching work? Does the platform offer formative assessments with reports for teachers? Does it offer pedagogical guidance to teachers?
DIMENSION 3 THE PROPOSAL IS CONSISTENT WITH ITS IMPLEMENTATION CONTEXT		
Criterion 3.1	Adequate costs and contract models	Are the platform's costs adequate, bearing in mind the school network's budgetary situation? Does the recommended procurement and payment model serve the public interest and promote quality services by the provider? Does the remuneration model favor the long-term sustainability of public investment, or are the content and technology freely licensed?

DIMENSION 3 THE PROPOSAL IS CONSISTENT WITH ITS IMPLEMENTATION CONTEXT		
Criterion 3.2	The technology is up-to-date and adjusted to the existing infrastructure	Does the platform work adequately in terms of speed, stability, and quality of use? Does the platform use up-to-date technologies? Is its technology scalable? Do the technology's requirements work well for the context of the school network's infrastructure? For instance, considering its equipment types, as well as Internet quality and speed.
Criterion 3.3	It enables integration with other digital systems and educational databases	Does it offer options in terms of importing and exporting data? Does it allow the automatic integration of enrollment data into its records? Does it allow integrating the platform with other systems for the purposes of receiving and transmitting data? Are students and teachers able to access the platform through a unified login system that aggregates different resources and platforms?
Criterion 3.4	It offers data visualization for learning monitoring	Does the platform collect information on its use and learning by students? Is this information structured in a clear way to support the planning of teaching activities? Is this information structured in a clear way to support pedagogical management at the school and network levels?
Criterion 3.5	It offers teacher training and user support	Does it provide clear user guides and guidance on its use? Does it offer training to teachers? Does it offer technical and instructional support to teachers?
DIMENSION 4 EFFECTIVENESS HAS BEEN DEMONSTRATED BY PRIOR RESEARCH		
Criterion 4.1	It demonstrates how its design is coherent with educational science	Does it offer conceptual references based on research that demonstrates the consistency of its educational design? Does it offer conceptual references based on research that demonstrates the consistency of the technology's proposed use for education?
Criterion 4.2	It was implemented at scale in similar contexts	Has it been implemented in Latin American public schools? Has it been implemented for a large number of students, and does it have a proven record on a large scale?
Criterion 4.3	Surveys highlight the educational platform's positive aspects	Is it based on an agile platform design and development process that incorporates usage data and user surveys aiming at continuous improvement? Have internal surveys been conducted to identify positive aspects of the platform's use? Have external studies been conducted to indicate positive aspects of the platform's use?
Criterion 4.4	Experimental or quasi-experimental external assessments demonstrate the platform's effectiveness	Have experimental or quasi-experimental external assessments been conducted that attest to the platform's effectiveness?

Source: Created by the authors.

4.

Structural conditions
and strategies for
planning and sustainably
implementing educational
platforms



The adoption of educational platforms can play a relevant role in strengthening Latin American educational policies, as long as it is backed by the enabling conditions for their successful implementation at scale.²³ Based on this perspective, this section is divided into three parts: (i) structural conditions for the implementation of educational platforms; (ii) planning and implementation of educational platforms; and (iii) strategic sustainability.

● Structural conditions for the implementation of educational platforms

The governance structure of digital transformation policies

The establishment of a governance body is an essential step for planning and coordinating a broad digital transformation of education, under which a strategy of digital platforms can be developed. The establishment of a Governance Committee is recommended, which is to be chaired either by the Minister or Executive Secretary of Education. Specialized technical units of the Ministry of Education must exercise the executive direction. In addition, an advisory board with rotating membership must be established, composed of regional leaders, experts, partners, and school representatives. This structure must ensure horizontal alignment between the various ministry areas (curriculum, assessments, technology, communications) and vertical coordination with regional directorates and schools.

Digital infrastructure: equipment and management systems

The success of implementing educational platforms hinges on the existence of a solid digital infrastructure, which must be ensured as part of the planning process related to the use of these platforms.²⁴ Such infrastructure includes: high-speed, stable connectivity capable of meeting the needs of multiple simultaneous school users; devices in good condition that are accessible to students and teachers, including adapted equipment for students with disabilities; adequate school facilities with a reliable power supply; integrated education management systems with unified access; automated basic procedures (enrollment, class formation, attendance records, grades), which provide the structuring data to the pedagogical implementation of platforms; digital security and privacy protocols; and the continuous provision of infrastructure maintenance and support.

Guidelines for using technologies in schools

The appropriate use of technologies in education can significantly contribute to teaching processes, as well as to the improvement of learning outcomes. However, the 2022 edition of the PISA assessment shows that the use of mobile devices for recreational purposes at schools tends to have a negative impact on learning. It has been observed in Latin America that math performance drops from an average of 381 points when devices are not used for leisure to 355 points when they are used for up to two hours a day and 318 points when they are used for more than seven hours a day.²⁵ For educators to feel comfortable and safe in using technologies with educational objectives, it is important that they have clear guidelines that distinguish between what types of use – educational and recreational – are allowed and when. The development of practical protocols is also recommended, so that school managers and teachers may effectively implement this guidance.

²³ The Inter-American Development Bank's impact framework defines five enabling conditions for integrating educational technologies into education on a large scale: digital devices; meaningful Internet connectivity; teachers' digital and pedagogical competencies; digital resources, platforms, and content; and governance. See Arias Ortiz et al. (2025).

²⁴ Rajasekaran et al. (2024); Arias Ortiz et al. (2021).

²⁵ UNESCO (2024b).

● Planning and the effective implementation of educational platforms

A multidisciplinary committee for the strategy of educational platforms

A recommended action is the establishment of a multidisciplinary strategic committee to manage the process of selecting and procuring educational platforms for the educational network. Committee members must represent different perspectives – pedagogical, technological, educational management, and public procurement. In addition to the representatives of the Ministry of Education, the committee may include external partners such as members of universities, civil society organizations, and school representatives. Committee responsibilities include setting objectives and priorities for the strategy of educational technologies, defining procurement and partnership models, implementing the curation process, as well as the definitions related to procuring educational platforms, and the cost and financial feasibility analyses in connection with the strategy – as will be analyzed in greater detail in the next sections.

Establishing objectives and priorities

The committee's first mission is to establish the objectives and priorities for implementing educational platforms. There must be clarity about the main educational problems that the adoption of educational platforms in schools is intended to solve. Educational platforms operate as complementary tools that enable a more far-reaching policy covering curriculum definitions, assessment, and teacher training. For this reason, the objectives of the use of platforms must be aligned with the current educational policy priorities. For instance, the Uruguayan program adopted an adaptive math platform in response to the low learning levels identified for the subject in the country. In Brazil, municipal departments of education were offered the possibility to use an application for assessing reading fluency in the context of a national policy to promote literacy at the appropriate age. Thus, the strategy for adopting educational technologies must be adjusted to each network's teaching model, as well as to its key structural elements such as curriculum, assessment, teacher training, and pedagogical management.²⁶

In addition to school levels and subject areas, it is also worth considering an initial implementation stage covering specific groups of schools, and the upscaling of activities after this initial trial and learning implementation period. It is in the interest of this process of setting objectives to include analyses of context data, teacher surveys, and consultations to regional and school leaders, to ensure that the strategy reflects the effective demands of these stakeholders and draws on consistent diagnoses. Another recommendation is to structure an assessment and proposition workflow comprising the definition of problems to be solved, the identification of relevant users, and a survey to verify the effective demand for educational platforms.²⁷

Participation and the strengthening of regional and local stakeholders

The large-scale implementation of educational technologies must be conducted through teamwork activities at three levels: the central level, the regional level, and the level of schools. It is therefore essential to strengthen, train and engage these teams.²⁸ At the central level, it is necessary to have a team of professionals specialized in technology and management of digital projects, as well as in the implementation work and training activities for the effective use of educational technologies at schools. In turn, at the regional level, technical and pedagogical support teams will monitor the implementation of platforms at schools, to strengthen the linkages between national policies and local realities. Finally, at the level of schools, principals and pedagogical coordinators must function as multiplier agents to ensure that local teachers receive continuing training, as well as favorable conditions and practical support for their efforts to integrate educational platforms into their lessons.

²⁶ For an example of this pedagogical model and a maturity scale for educational technology companies and departments of education, see Programa ImpulsiONar (n.d.).

²⁷ Inter-American Development Bank (2021).

²⁸ Nogueira Filho (2025); Rajasekaran et al. (2024)

Since the success of the implementation effort depends on the regional levels and, above all, on the local levels (of school managers and teachers), it is essential to ensure that these stakeholders will take part in the different policy planning and management stages through surveys, participation in committees, communication initiatives, active listening and collective construction, to ensure legitimacy and alignment with the real needs at the school level. It must also be ensured that teachers and pedagogical coordinators will have sufficient time, during their working hours, specifically dedicated to planning in connection with educational platforms, and, in their classrooms, to use them.

Defining procurement and partnership models

There are different procurement alternatives in connection with educational platforms and digital content, including platform combinations according to each network's educational objectives and to the available platform options and financial resources. The table below describes key procurement possibilities, together with their strengths and weaknesses:

PROCUREMENT PROCESS	STRENGTHS	WEAKNESSES
Developing an in-house platform	Customized design and features according to the Ministry of Education's specific needs. Total control over source code, data, features, and security. Independence from external providers for updates, support, and licensing.	Requires significant initial investments in human resources, infrastructure, and time. The process may be slower than other options. It is necessary to have a well-trained internal team to guarantee updates, support, and operational continuity, as well as a consolidated culture of technological innovation. Without adequate planning, the platform may quickly become obsolete.
Commissioning or collaborating for the development of an external platform	Customized design and features according to the Ministry of Education's specific needs. Platform development is conducted by a specialized organization, which may be a company, a not-for-profit organization, or a research center.	When the ministry is the only customer and user, it usually bears most costs related to the platform. Dependency on the provider for updates, support, and eventual modifications. Without adequate planning, the platform may quickly become obsolete.
Using free platforms	Since the platforms are free of charge, procuring them does not require economic investments. Platforms are usually designed with a focus on the public good.	Difficulties in guaranteeing the necessary features that respond to the Ministry of Education's specific needs. There may be no guarantee of technical support or training related to the platform's use. If the institution responsible for the platform stops operating, the platform's support and updating activities may be interrupted.

PROCUREMENT PROCESS	STRENGTHS	WEAKNESSES
Using paid platforms as a service	The platform is ready for use and there is less need for internal investment in development, technical capacity, and infrastructure. Market competition stimulates innovation and continuous product improvement. Regular updates, maintenance, and technical support guaranteed by the provider.	Dependency on the provider for the service's continuity and quality. As a rule, limited flexibility for customized adaptations. Subscription costs can add up over time.

Regardless of the choice between developing in-house platforms and using third-party solutions, it is recommended that educational systems explore the adoption of open-source and freely licensed resources. The advantages of open-source licenses include free or low-cost access; flexibility for modifying and customizing resources; the possibility of open collaboration with teachers and experts; content reuse; and reduced dependency on individual providers.

Curation process and procurement

It is relevant to seek a procurement process for educational platforms featuring centralized management and broad competition. The process will depend on the local legislation related to government procurement.²⁹ The assessment and selection of educational technologies must be as objective and transparent as possible, so as to maximize the achievement of the established educational objectives and to make clear that the process is sound and technically driven. Additional guidance in connection with this process is shared below.

- Conduct a market study before formalizing and circulating procurement criteria and processes, to ascertain the features, possibilities, and prices of available national and international platforms and verify whether they align with the established educational objectives.
- Use a clear scoring rubric with objective criteria for the assessment of educational technologies, such as the one presented in this note – which includes detailed questions for each criterion and an assessment scale ranging from 1 to 4 (in which 1 means “strongly disagree” and 4 means “strongly agree”).
- Widely publicize the selection process for procuring educational technologies and its criteria, to enable the participation of different providers.
- If possible, assess at least three different platforms for each objective and document their assessments according to the established criteria, with specific records for each provider. A transparent process with detailed documentation provides evidence of integrity and alignment with the educational platforms’ strategy.

²⁹ For details on platform procurement processes, see: Inter-American Development Bank (2021).

The committee responsible for the educational platforms' strategy may choose to conduct a centralized curation and selection process for the platforms that will be used by the network's schools, or they may opt for a more participative process in which the curation activities are conducted by the committee, while schools choose from a list of recommended platforms. This second course of action must include the necessary space so that schools make their own decisions – for instance, between two platforms with the same objective, or to implement platforms with distinct objectives considered to be strategic by the committee.

These two options have their respective advantages and disadvantages. Our recommendation is to select the most appropriate option bearing in mind the educational network's current context. Selecting the same platform for all target schools under a program may reduce costs, simplify implementation management and support to schools, and enable aggregate data analysis and evaluation of the rollout. On the other hand, allowing schools to choose from pre-selected platforms may make the process fit school contexts better, increase local ownership and, potentially, educators' commitment to the successful implementation of their selected solution.

Cost analysis and financial feasibility of the strategy

A detailed cost analysis at the beginning of the strategy's implementation is essential for assessing its financial feasibility, prioritizing actions, anticipating financial inputs, and estimating future funding needs. There are two types of costs: implementation costs related to the strategy's rollout; and operation costs, which are recurrent and tend to increase with the expansion of the platforms' use.

Implementation costs directly related to the platform:

- Developing a new platform: when developing a new platform and its content, initial costs will be primarily related to personnel hiring or contracting with specialized organizations. These costs include project and product managers, technology team, and pedagogical design and content, among other demands. It will also be necessary to invest in technological infrastructure, including services such as cloud storage, network infrastructure, and data management and security, among others, for system development and rollout;
- Using a free platform through a collaboration agreement: in this case, there would be no costs related to the platform's development, but it is necessary to consider the costs of integrating it with the Ministry of Education's technological infrastructure, as well as with platform aggregators, learning management platforms, and user database, among other aspects;
- Hiring a paid platform service: in this modality, there is usually an initial cost to be paid for data integration processes, platforms, and user database – as well as, in some cases, for the platform's configuration and content adaptation. Most of the cost under this model is usually paid monthly as a service.

Additional implementation costs:

- Management and project monitoring teams at the Ministry of Education and at the territorial level;
- Technological infrastructure;
- Teacher training activities;
- Pedagogical materials in support of curriculum alignment;
- Development of instructive materials on implementation guidelines;
- Communication and dissemination.

Operational costs:

Some recurrent costs in the use of educational platforms are considered as operational costs. For instance:

- Project management and monitoring;
- User support;
- Equipment, infrastructure, and platform maintenance;
- Continuing teacher training;
- Communication and mobilization;
- Implementation of security and privacy protocols;
- Software updates and platform scalability.

In the case of developing an in-house platform, the Ministry of Education bears all implementation and operation costs. In turn, in the case of resorting to free platforms through collaboration agreements, it is essential to identify which costs are covered by the provider and which costs are borne by the Ministry of Education – particularly, costs related to the platform's operations (for instance, teacher training, user support, and technological infrastructure).

In the case of platforms contracted as a paid service, this technical note recommends that the contract establishes a monthly license, which, in addition to access to the platform, must cover other costs such as:

- Customer service team and user support;
- Production of recurrent use indicators and results, which will serve as inputs for decision-making processes;
- Teacher training on the platform's use;
- Scalable infrastructure with the capacity to accommodate growing usage;
- Platform and content security, maintenance, and update processes;
- Communication support for interacting with teachers and schools.

The cost of the license is usually the most relevant factor in this type of contract. For this reason, this note recommends negotiating with the provider a price structure that is efficient for governmental purposes, thus guaranteeing the provision of quality service and its scalability. Such a structure must recognize that the platform's main contribution resides in its usage starting at the level in which learning benefits and skills are produced. Based on this notion, the concept of **active user** – a definition that depends on each platform's context and particularities – must be agreed, and the cost can be calculated per active user with tiered schemes corresponding to different usage levels. For instance, higher fees to serve up to 10,000 active users; intermediate fees to serve 10,000 to 100,000 users; and reduced fees to serve more than 100,000 active users.³⁰

Licenses are frequently offered by providers in terms of potential users, which are usually estimated based on the number of enrolled students to which the platforms will be assigned. But it must be stressed that this modality does not provide adequate platform use incentives, since it only makes the license cost contingent on the availability (i.e., potential users), and not on the relevant factor, which is its effective use (active users).

Therefore, this note recommends that contracts be adjusted to the effective number of platform active users, instead of considering only the total number of enrolled students and teachers (potential users). This course of action will probably optimize costs and motivate providers to collaborate with the government to expand usage among students and teachers. The best option would be to stipulate platform prices according to the intensity of usage and to pay for the number of active or intensive users who attain a minimum monthly usage level considered as appropriate (for instance, a minimum number of completed lesson sequences or answered exercises). By acting in this manner, license costs will not only be related to the service's availability (i.e., to potential users), but also to the most relevant factor, which is its effective use (by active users). Ceibal, for instance, uses this pricing model in all its platform procurement processes.

A final recommendation is to plan the costs associated with assessing the platform's implementation and effectiveness. This analysis can be conducted on a semiannual or annual basis to measure the impact of activities and enable strategic adjustments, whenever necessary, using the monitoring and evaluation data generated by the platform. Likewise, it is essential to have a dedicated ministry team responsible for analyzing this data and enabling inputs for strategic decision-making.

³⁰ For details on platform procurement processes, see: Inter-American Development Bank (2021).

Configuring and adapting the platforms to different contexts, languages, and curricula

After the procurement and contracting stage has established the platform's partnership, the next stage is implemented together with the provider, encompassing all aspects related to configuring the platform for use by network schools. It includes, for instance, the platform's integration with learning management systems, web portals that aggregate other platforms and types of content and user databases, as well as data migration, customization options, and curricular alignment procedures. In some cases, it will also require translating content into the languages spoken by the country's students.

Participation and communication

The implementation of educational technologies implies a cultural change in the way in which the pedagogical work is conducted – an endeavor that requires significant teaching efforts. It is important to stress that teachers maintain their autonomy to structure lessons according to their own criteria, and that the effectiveness of educational platforms will hinge fundamentally on their ability to be convinced and motivated, and to feel safe and perceive the benefits of this tool for their teaching practices. School principals, in turn, play an essential role since they are directly involved in the management of teaching activities and school processes. But the role of teachers is even more decisive since they are the ones directly in contact with students.

An essential step in fostering this motivation is to involve school actors in the stages of the educational platform selection process. Another is to communicate clearly the objectives of the educational technology strategy and their importance, highlighting the positive impacts for both students and teachers. Training, technical and pedagogical support, and clear alignment with the curriculum also help to engage teachers, giving them greater confidence and effectiveness in the use of these tools, as well as the perception that the platform facilitates their work and engages their students. Finally, ensuring that teachers have sufficient protected time during the week to plan lessons that use technology is another factor that affects its effective use.

Teacher training

Numerous studies have emphasized that teacher training is an essential condition for the effective use of educational platforms.³¹ In addition to, and beyond the effort of learning to use specific platforms, the objective of teacher training activities is that teachers become frequent, intentional, and proactive users of technology in educational processes. Taking the Edutec Guide³² as a reference in this regard, it is desirable that they are able to attain at least the guide's fourth competency level.³³ In other words, it is desirable that they integrate technology on a contextualized and intentional basis to their daily practice, both in their planning of activities and interactions with students.

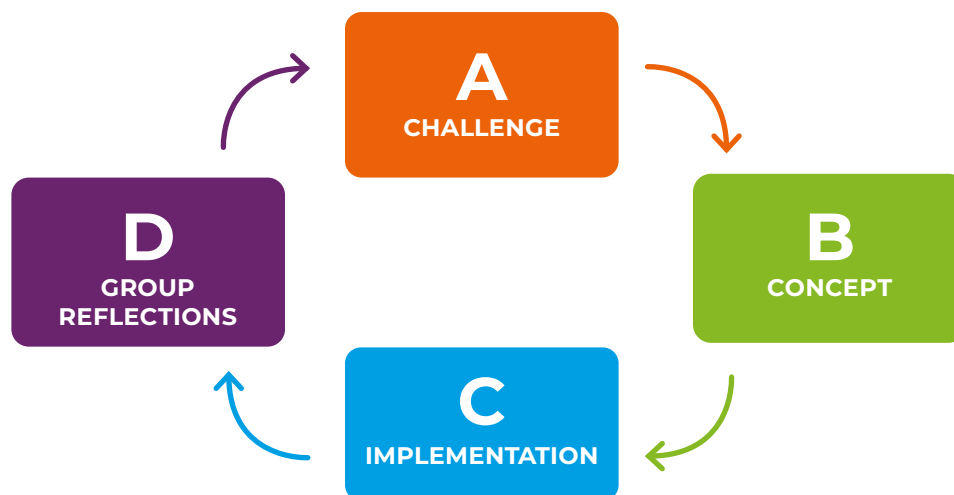
As regards teacher training methodologies, it is recommended that the entire program be based on the practical application of the defined concepts, followed by group reflections and feedback spaces. Each topic can be structured using a circular methodology, as shown in the image below:

³¹ CIEB (2025); Foster et al. (2023)

³² Gottlieb et al. (2024)

³³ According to CIEB (2019), the five teacher competency levels identified by the Edutec Guide are: (1) Exposure: the technologies are not used in teaching practices, or their use requires third-party support or is merely personal. The technological solution is an available tool, but it is not part of digital culture. (2) Familiarization: the teacher begins to learn about and use technology on a one-off basis in support of the teaching process. The use of technology is centered on the teacher's person. (3) Adaptation: technologies are periodically used and may be integrated into pedagogical planning. They are seen as complementary resources to the pedagogical processes. (4) Integration: there is a frequent use of technologies in the planning of activities and interactions with students. The teacher operates the technologies in an integrated and context-based way in teaching and learning processes. (5) Transformation: the teacher uses the technologies in innovative ways, while sharing experiences with their colleagues and conducting collaborative projects beyond the school's environment, thereby identifying the technologies as social transformation tools.

Figure: Recommended teacher training methodology



Source: Created by the authors.

In this image, each key training concept encompasses four stages:

- A** Presenting an educational challenge that may be addressed through the support of educational technologies;
- B** Based on the challenge, briefly explaining the topic and the concept to be taught;
- C** Applying the concept or strategy, preferably in real classroom situations;
- D** Finally, reflecting collaboratively by sharing challenges and lessons learned, and providing mutual feedback.

Even though the objective of training activities is broader, it is desirable to use the selected platforms throughout the course as references, so that teachers' learning process may be more practical and directly aimed at the concrete challenges that they will need to address in their classrooms.

This technical note recommends splitting teacher training activities into two stages, namely initial training, and continuing training. Whenever feasible, part of the initial training should be conducted in person, since this format may bolster motivation and attentiveness among teachers, thus enhancing the effectiveness of their formative process. Likewise, it would be beneficial to conduct periodical in-person sessions at schools for the provision of continuous training.

Initial training must cover central concepts, simulate the use of technologies and promote a digital-citizenship approach at schools.³⁴ Continuing training, in turn, should deepen teachers' knowledge of concepts and strategies based on the effective implementation of these notions and technologies to enable experimentation, problem-solving and collective learning throughout the implementation process.

Relevant teacher-training topics include: benefits and risks of technologies in education; the planned use of educational technologies for the attainment of pedagogical objectives; active methodologies and hybrid teaching; time, space, and resource planning; pedagogical management for technology use; technical troubleshooting and support; the responsible and safe use of technologies; formative assessments supported by technologies; planning, customization, and collaboration supported by data, technology, and artificial intelligence; technologies for diversity and inclusion.

³⁴ Digital citizenship is the ability to use information technologies to actively participate in the digital ecosystem and in society. It includes competencies in terms of understanding, analyzing, producing, and using the digital realm in critical, ethical, and creative ways. See Serrano Pájaro, Ferrante and Escamilla (2022). See also Dalio et al. (2023).

Pedagogical guidelines and continuous technical and pedagogical support

The use of educational technologies must be aligned with the pedagogical objectives of the Ministry of Education, of schools, and of teachers. Technological platforms are often used as tools in support of the curriculum's implementation. To promote its effective and proper use in relation to the established objectives, the development of guidebooks for schools and teachers is recommended, including the following topics:

- Curricular objectives to which platform tools can contribute;
- Examples of lesson sequences for the attainment of individual objectives with the support of digital platforms;
- Suggested timetables for applying lesson sequences;
- Periodical assessment proposals.

The support provided by detailed teaching recommendations is extremely relevant, but it is also necessary to ensure the due space for teachers' autonomy and for the possibility of adapting recommendations to their own professional contexts and criteria.

Throughout the school year and in their activities, teachers also need technical and pedagogical support for the effective use of educational platforms. The platform's provider or a subcontractor often provides technical support, whereas pedagogical support may involve the assistance of different actors such as the platform's provider, educational technology experts from the regional education departments, and pedagogical coordinators or educational technology advisors based in the schools.

Monitoring the use of educational platforms

Implementing educational technologies at scale requires an active management effort by the Ministry of Education. The creation of a coordination unit to implement the strategy for the use of technologies at schools is recommended. This unit should be supported by:

- Platform providers in charge of providing technical support to teachers and school managers, as well as of monitoring usage data together with the ministry for troubleshooting support.
- Pedagogical teams experienced in the use of educational technologies at the level of regional departments, who must conduct periodic school visits to provide follow up, offer in-person training, and collect context data. This will enable enhancing the technology's implementation in classrooms and guarantee that platforms' usage is adequate for each school's needs and challenges. The definition of clear objectives, protocols, indicators, and monitoring strategies for these visits is recommended.

The management of educational platforms and their use is based on the monitoring of usage data, as well as on periodical meetings between ministry officials, platform providers, and persons in charge at regional departments. These meetings include the discussion of usage data and the definition of strategies to support, adjust, and strengthen the implementation.

Before beginning to use the platforms at schools, the monitoring unit and platform providers must jointly define the following elements: key monitoring indicators; the relevant data to be collected and its visualization format; and the frequency and methodology for analysis and joint discussion. Another recommendation is the systematic analysis of technical support data collected by the providers, to detect recurrent issues and define how to address them through product improvements, implementation adjustments, or better support strategies.

The monitoring unit may also maintain direct communication with interested teachers to better understand the challenges identified in the data and to propose solutions aligned with their needs and objectives. It is also essential to identify teachers and schools with successful experiences, so that they may serve as references and models for other institutions. The exchange of experiences among teachers may become a motivating element.

Strategic sustainability

A successful strategy in the implementation of educational platforms in school networks must be conducted in a gradual and consistent way over the years. In this regard, it is important to build consensus on the need for the strategy to transcend political cycles and to involve society at large, thus guaranteeing its continuity, consistency, and progress as the policy is implemented. Such a consensus must be institutionalized under the country's laws and supported by an adequate organizational structure. In addition to the policy's institutionalization, the financial sustainability of the platform's strategy must be ensured. To attain this aim, the strategy's planning must envisage the need for recurrent financial resources over the years, to guarantee its continuous implementation, as well as its evolution and adaptation to technological change and its consequences for education. Resource planning for educational technologies must be coherent with the school network's budgetary capacity. A usual policy planning issue is the practice of emphasizing capital expenditures (Capex) while underestimating operating expenses (Opex) in the systems' management, maintenance, and updates over time. An interesting principle, in this sense, is applied by Ceibal in Uruguay, which assigns nearly 5% of the basic education budget to maintaining digital transformation initiatives.³⁵ Finally, the ability to guarantee the sustainability of educational platforms beyond political and government cycles hinges on the capacity of the digital transformation and educational platforms to become part of a cultural change, as well as of the daily routines of the persons responsible for implementing them, from the ministry's central level, through regional units down to the level of schools. Consolidating such a cultural change requires time and a combination of management routines, professional training activities, adequate conditions and incentives, and a perception of value by the professionals who must conduct it. The implementation cases below describe diverse reference paths that have been taken to materialize the effective implementation and the sustainability of educational platform strategies.

³⁵ Considering the Ceibal strategy of using third-party educational platforms. Arias Ortiz et al. (2025).

5. Implementation cases



The opportunity to learn about the experience of different countries with the implementation of educational technologies shows that despite different trajectories, some common pillars can be identified. The cases presented below illustrate the realities of countries with distinct cultural and geographical contexts, which are also undergoing quite distinct stages in terms of their implementation of educational technologies. In all three cases, the digital transformation challenge in education is addressed by implementing a partnership between the Ministry of Education and specialized institutions. The three summaries were developed based on official websites, public documents, and interviews with leading representatives of the organizations.

● The Croatian Academic and Research Network (CARNET)

The CARNET network is a public institution founded in 1991 that operates under the Croatian Ministry of Science, Education and Youth with the objective of promoting innovation in the educational system, as well as the advancement of individuals and society using information and communication technologies.³⁶

In the 1990s, CARNET focused on providing Internet connectivity for higher education. Starting in the 2000s, the network also started working in basic education, initially providing support to teachers who were technological enthusiasts and, later, working with a group of pilot schools to understand their needs and develop a broader program for the entire basic education system.

Since then, the network has promoted the digital transformation of Croatian education through a holistic methodology that covers all schools of the country. This methodology comprises simultaneous activities in the dimensions of infrastructure, teacher and school manager training, cultural change at schools, management systems, and digital content.

The CARNET network provides schools with a set of integrated digital systems, including the ones to be described below, among others:

- **E-schools DEC:** a repository of freely licensed digital content and modular resources in Croatian, aligned with the national curriculum, commissioned from educational publishers and also developed by teachers themselves, including guidance manuals for educators;
- **Loomen:** a Moodle-based learning management system that was widely used during the COVID-19 pandemic and is currently used in contexts of hybrid teaching, training of educators, and student competitions;
- **E-class:** a nationwide lesson management system used by teachers to manage data related to attendance, grades, and feedback, among other resources;
- **E-enrollment:** a management system for student enrollment and teacher allocation.

Transformation at schools is measured through an instrument named “School Maturity Framework,” which periodically assesses Croatian schools according to five dimensions: (1) planning, management, and leadership; (2) technology in teaching and learning; (3) digital competence development; (4) technology culture; and (5) technology infrastructure. Based on the results of this assessment, schools proceed to the planning of the next step of their

³⁶ CARNET – Croatian Academic and Research Network (n.d.); Digital Skills and Jobs Platform (n.d.).

evolution together with the CARNET network. Such active participation of stakeholders at the school level in the decisions that regard their professional development and that of schools has been perceived as an essential factor for consolidating a technology culture and the digital transformation of schools.

Continuous support, in-person school visits, the training of teachers and school managers, and the exchanges among them are fundamental elements of the CARNET strategy. In this regard, its in-person and online annual conference on best practices is an important learning, visibility, and motivation pillar for all participants.

Relevant implementation challenges include: the continuous need to update technologies and educational proposals; the slow pace of some of the required processes; the ability to ensure the commitment of all system stakeholders; cybersecurity, particularly, in relation to artificial intelligence; and the sustainability of the policy's funding.

Looking to the future, the newly implemented Brain Project brings together extracurricular activities for students and teachers on artificial intelligence and the use of data from the digital systems to guide the pedagogical activities of teachers and students. Furthermore, the *CARNET Hub* – a community for sharing research initiatives, ideas, and challenges related to technology and education in the present and future – is currently being established.

The Ceibal Center in Uruguay

Ceibal is the name of Uruguay's Innovation Center for Digital Technologies in Education. It promotes the integration of digital technologies into education with the aim of enhancing learning and bolstering innovation, inclusion, and personal development.³⁷

Ceibal activities began in 2007 to address the challenge of enabling Internet infrastructure at all Uruguayan schools and one computer for each student and teacher. Since then, its challenges have evolved from universalizing the necessary infrastructure for the use of technologies, through the availability of content and platforms, to more recent topics such as artificial intelligence literacy.

The topics of access and equity have been central pillars of the Ceibal proposal since its beginning, together with the understanding that technology is a tool which must be planned to enable adequate support to teaching and learning processes. Today, Uruguayan schools have a learning management platform that enabled the continuity of studies during the pandemic, as well as a set of educational programs and platforms that bring together technology and innovative pedagogical practices.

The center's institutional aspect has been extremely relevant over the almost two decades of its existence. It is an institution funded by the government, but its structure follows private management rules. On the one hand, the consistent provision of state funding over the years – beyond political and electoral cycles – has ensured the sustainability of its program, as well as its solidity and continuous improvement. On the other hand, since it is managed as an independent organization, it has attained the necessary agility to test innovations, make changes and continue to evolve. Likewise, with the passing of time, it has established a mature and specialized team motivated by a solid working culture focused on innovation, learning, and equity.

One of the lessons learned from its trajectory is that the provision of infrastructure or digital content is only the beginning of the process. Beyond making a computer available for each student, Ceibal has provided technical

³⁷Ceibal (n.d.); Molina et al. (2024).

support for the computers' use and maintenance. In addition to providing platforms, it has a robust structure that encompasses teacher training, usage data monitoring, assessments, and support so that assessments can be effectively used throughout the teaching and learning process.

As regards educational platforms, Ceibal does not develop them but resorts to a diversity of contract types with providers and free licensed technologies for content production, while always ensuring economic sustainability. The platform selection and procurement process is conducted by a specialized team that is constantly monitoring the international platforms' market and is knowledgeable about current options. The selection of educational platforms is conducted based on the detection of an educational issue that needs to be solved. Next, a call for proposals is issued, together with a procurement process based on three broad criteria: (1) a technical criterion, including the robustness and compatibility with Uruguay's current systems and context; (2) a pedagogical criterion aligned with the country's curriculum; and (3) a sustainability criterion that regards the proposed business model over time. Since service payments are not calculated according to the number of registered students but, instead, according to the educational platform's effective use, the Ceibal model avoids paying for what is not being used.

All data on usage generated by the platforms are made available by Ceibal, which analyzes them with the aims of monitoring and evaluating the platform's implementation, and providing inputs on the need for enhancing, maintaining, or replacing the usage process. Beyond assessing whether the platforms are generating specific learning outcomes, this methodology sets out to understand the usage contexts of schools and indicators such as girls' participation, absenteeism, and equity levels.

Teacher training is also an extremely relevant pillar of Ceibal's activities. With the passing of time, it has become increasingly evident that such training must not be restricted to learning about how to use technologies or tools. Instead, training activities must comprise innovative pedagogical models and the possibilities of integrating technologies into these models to train teachers as agents capable of coping with diverse contexts and constant change.

The Ceibal strategy recently set out to address the challenge of artificial intelligence literacy aimed at teachers, students, and families. The idea behind this strategy is to promote AI literacy in education, as well as for life in society, while acknowledging its uncertainties and navigating reality with a flexible and evidence-based outlook.

Brazil's Educational Technology Policy

Brazil's National Education Plan, recently approved by the National Congress and enacted as Law No. 15.388/2026, sets out to ensure high-speed Internet connectivity for pedagogical uses, including through internal Wi-Fi networks, for 50% of all Brazilian public schools of the basic education network within two years, for 75% of all schools within five years, and for all public schools of the country within 10 years.³⁸ In pursuing this objective, the Ministry of Education is implementing several programs and initiatives to integrate technology into education,³⁹ including:

-  *Escolas Conectadas* ["Connected Schools"]: a strategy of the federal government in partnership with states and municipalities to ensure quality Internet access for the pedagogical use of technologies, as well as digital and media literacy for all public schools of the basic education cycle;

³⁸ Brasil. Presidência da República (2026), Lei nº 15.388/2026

³⁹ Brasil. Ministério da Educação (n.d.).

- The computing education addendum to the National Common Curricular Base (BNCC), with annual learning objectives for the basic-education cycle, structured into three axes: computational thinking, digital world, and digital culture;
- *MEC Gestão Presente* ["MEC Present Management"]: a platform recently launched by the federal government to modernize educational management in public school networks through digital transformation, in support of departments of education and schools nationwide for integrating educational data. The platform has two modules: *Sistema Gestão Presente* ["Present Management System"], which integrates basic education data; and *Gestão Presente na Escola* ["Present Management at School" module], aimed at municipal networks, which includes features such as enrollment, class grouping, and the class register;
- *Programa Nacional do Livro e do Material Didático* ["National Textbook and Teaching Materials Program"], which procures and distributes textbooks and literary books both in printed and digital formats to all students at the country's public schools.

Considering the context of a country of continental dimensions such as Brazil, a not-for-profit institution named MegaEdu was created by a coalition of civil society organizations to provide support to the Ministry of Education and state and municipal governments in taking high-speed Internet connectivity to all public schools nationwide.⁴⁰ Since its establishment, MegaEdu has produced data and knowledge, in addition to providing free technical support to public managers at the three levels of government and school managers. It is focused on developing practical, evidence-based solutions in continuous dialogue with the leading figures responsible for digital transformation in the country. It provides technical support to federal policy managers and secretaries and managers from local departments of education in designing plans for the universalization of quality Internet for pedagogical use at schools.

Official monitoring data shows that over the past two years, the percentage of Brazilian schools with adequate connectivity infrastructure according to the quality parameters defined by the national "Connected Schools" strategy increased from 46% to 66%.⁴¹ The next step in this universalization process will be to provide support to educational networks for the effective management of this tool in teaching and learning activities, while operating with connectivity – a key factor for the effective use of educational platforms.

⁴⁰ MegaEdu (n.d.).

⁴¹ Brasil. Ministério da Educação (2025)

6. Conclusion



The incorporation of educational platforms into the classrooms of the education systems of Latin America and the Caribbean is a concrete opportunity to expand learning access, equity, and quality. The evidence shows that the use of digital educational resources – and, more particularly, of educational platforms – can enhance students' motivation, engagement, and academic performance when these resources are consistently integrated into teaching practices. To attain these outcomes, the implementation of educational platforms needs to be part of a broader digital transformation strategy for the educational sector, including the planning of adequate infrastructure and solid governance.

The strategy for implementing educational platforms encompasses the assessment and selection of platforms by a multidisciplinary group of professionals based on transparent and objective criteria covering the pedagogical, technological, and economic dimensions, among others. Experience shows that the selection and distribution of platforms is only the first step in this trajectory, and that effective implementation involves different dimensions such as the provision of training, guidance, and support to educational managers and teachers, as well as the operationalization of platform and policy monitoring and evaluation mechanisms. A fundamental step toward the sustainability of educational platforms is the planning of their long-term financial feasibility as a policy, combined with the promotion of governance to allow for increasing participation at the regional and local management levels. This latter element is expected to prompt teachers' engagement, strengthening a culture of professional development, practice exchanges, and pedagogical innovation aiming at the enhancement of student learning.

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