



School digital infrastructure and educational technologies in Europe



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INTRODUCTION

In recent years, digital infrastructure and educational technologies have become foundational components of European education systems. The COVID-19 pandemic acted as a catalyst, revealing both the potential and the gaps in digital readiness across countries (UNESCO, 2023). It accelerated the deployment of digital tools, connectivity and platforms, and highlighted the need to align infrastructure with pedagogical goals, equity objectives and system governance frameworks (OECD, 2023).

At the system level, digital infrastructure in education encompasses more than hardware; it includes longitudinal student information systems, interoperable data flows, national connectivity, and decision-support tools that enable real-time insights for policymakers, educational leaders and teachers. While many European education systems have established central student registers and information systems, their utilisation often remains limited to statistical purposes rather than dynamic, real-time educational management (OECD, 2023).

At the institutional level, digital infrastructure has rapidly evolved. Schools increasingly rely on high-speed broadband, learning devices and interactive platforms, such as learning management systems to facilitate teaching, learning and assessment. Investment in connectivity and devices has been supported by national strategies and, for EU Member States, by the European Recovery and Resilience Facility funds that seek to reduce disparities and improve digital access and competences (European Commission, 2024).

European education systems are also increasingly focusing on emerging technologies, including artificial intelligence (AI) (European Schoolnet, 2025). Countries are exploring how AI can support personalised learning, automate routine tasks and inform instructional decisions, while policy debates underscore the need for robust ethical

frameworks and guardrails to ensure AI enhances equity and learning outcomes (UNESCO, 2025) and research shows ethical, technical and pedagogical shortcomings of AI in EdTech (Atabey, Ringmar, & Livingstone, 2025).

This publication addresses the need for a better understanding of the state of play, across European countries, of school digital infrastructure and educational technology. It aims to explore the set-up and use of digital infrastructure provided to/used by schools and the level of control of such technology. This reflection relates to the issue of digital sovereignty in Europe (European Parliament, 2020), the increasing privatisation of digital infrastructure (UNESCO, 2021) and how both may impact the formal education sector.

The report is based on an online survey circulated among European Schoolnet's members in January-March 2026. It does not intend to be exhaustive and aims to help draw a first overall picture of the state of play in the education systems covered and appreciate eventual interests and needs that education authorities may have in the area. Using as a reference the OECD's Digital Education Outlook 2023 (OECD, 2023), this report specifically focuses on two types of digital infrastructures of relevance for formal education: **Education and Student Information Systems (ESIS or SIS)** and **Learning Management Systems (LMS)**. The publication summarises the responses from 17 education systems: Belgium (Flanders) (BE (fl)), Croatia (HR), Cyprus (CY), Finland (FI), France (FR), Greece (EL), Lithuania (LT), Luxembourg (LU), Netherlands (NL), Norway (NO), Portugal (PT), Serbia (RS), Slovakia (SK), Slovenia (SI), Spain (ES), Sweden (SE), and Türkiye (TR).

EDUCATION AND STUDENT INFORMATION SYSTEMS

Education and Student Information Systems (ESIS or SIS), also referred to as Education Management Information System (EMIS), are system-level digital tools which collect and give access to information about each student, including demographic information, school attendance and their learning trajectory within the education system, while including information about schools and sometimes teachers as well (OECD, 2023). Usually, different stakeholders have access to different types of information about students, schools and possibly teachers, depending on their role.

ESIS and level of control

The survey showed that all 17 participating education authorities use Education and Information Systems (Table 1). Respondents reported using one or multiple ESIS platforms serving different functions. Some respondents elaborated on the context of their country, provided below.

In **Belgium (Flanders)**, the distinction between a central, system-level SIS and school-level digital platforms is not always clear. Smartschool or Questi primarily function as Learning Management Systems (LMS) but often have SIS features, services or functionality. The actual central system in Flanders is the **Discimus database**, managed by the Flemish Education Administration (Agentschap voor Onderwijsdiensten – AGODI). This serves as the authoritative repository for administrative student data, including enrolments and educational trajectories. This database is populated via automated exchanges from school administrative software. In addition, [LeerID](#) acts as an authentication and access layer built on Discimus, providing students with a unique digital identity and access to various digital tools. This layered setup illustrates that the central SIS in Flanders is largely invisible to end users, adding to the ambiguity in identifying SIS.

In **Greece**, in addition to the existing national ESIS, there is a project for an AI-powered platform (Eduplan AI) that will enable predictive analytics and strategic workforce planning. It is intended to function as a tool for the early identification of educators staffing needs and the effective allocation of personnel. Access and administration of the system will be strictly limited to authorised officials within the National Authority, namely the Ministry of Education, Religious Affairs and Sports.

In the **Netherlands**, the centralised systems are run by a service of the Ministry, DUO (Dienst Uitvoering Onderwijs). DUO manages [ROD](#), which registers education programmes, and [RIO](#), which registers participants in education, and MijnDUO is a student-facing platform. MijnDUO allows for schools and municipalities to register information such as school attendance and student diplomas. Apart from the national infrastructure-based information systems shown in Table 1, there are also student management systems and platforms operated by each school, which transmit information to centralised systems; however, these are not publicly accessible.

In **Portugal**, the DGEEC and Pordata platforms are statistical portals that provide aggregated education data and indicators. As such, they do not constitute Education and Student Information Systems (EMIS/ESIS) as defined by the OECD, which require access to individual-level student data and learning trajectories. Student-level information is primarily managed at the school level through a variety of school management systems (e.g. Inovar+ and other similar platforms), which support core operational processes such as student records, attendance and assessment. These systems transmit selected data to centralised information systems managed by the Ministry of Education, most notably the RCA (Repositório Central de Alunos), which functions as the main national repository of student-level data for administrative, statistical and policy purposes.

Additional systems, such as SIGO, support specific education and training pathways, particularly in vocational education and adult learning.

In **Slovakia**, teachers use a system managed by a private company for communication with parents and students. The Slovak Ministry of Education operates its own sectoral information system, which serves as a registry of all important data about students and teachers, and acts as the primary knowledge base for calculating normative school funding. Partial information about this data can be shared with other stakeholders, although the complete data sets are not publicly accessible. The system provides the Slovak ministry with data, including demographic

information, school attendance, and students' learning trajectories within the education system, as well as information about schools and teachers.

In **Spain**, each autonomous region uses their own student information system platform. In Spain, education is a regionally governed, and the national government only holds direct responsibility for the autonomous cities of Ceuta and Melilla.

In **Sweden**, the ESIS systems contain both ESIS and LMS features similar to Flanders, because providers combine these features in their services as common practice. [Tieto](#), [Schoolsoft](#) and [IST](#) lean more towards serving ESIS purposes.

Table 1 - Education and Student Information Systems* and level of control.

Education System	Name of tool(s)	IT provider of the tool(s)
Belgium (Flanders) (BE (fl))	Discimus database LeerID Smartschool Questi	Private national provider (local company) on behalf of the education authority Private provider (non-European company) on behalf of the education authority
Croatia (HR)	EduTORij e-Dnevnik	National/regional education authority (own infrastructure)
Cyprus (CY)	eDEA The Electronic Education Administration Platform (eDEA) of the Cyprus Ministry of Education, Sport and Youth	National/regional education authority (own infrastructure) Private national provider (local company) on behalf of the education authority
Finland (FI)	Wilma DigiOne	Private provider (European company) on behalf of the education authority National/regional education authority (own infrastructure)
France (FR)	ONDE SIECLE	National/regional education authority (own infrastructure)
Greece (EL)	myschool eschools (under development) Eduplan AI (under development)	National/regional education authority (own infrastructure) National/regional education authority (using private services e.g., Amazon, Google, Microsoft, etc.)
	Mitroo (registry for teachers' professional development activities)	National/regional education authority (own infrastructure)

Education System	Name of tool(s)	IT provider of the tool(s)
Lithuania (LT)	Student registry Education Management Information System (EMIS)	National/regional education authority (own infrastructure) National/regional education authority (using private services e.g., Amazon, Google, Microsoft, etc.)
Luxembourg (LU)	Fichier élèves Scolaria Untis	National/regional education authority (own infrastructure)
Netherlands (NL)	Vensters Registratie instellingen en opleidingen (RIO)	National/regional education authority (own infrastructure)
Norway (NO)	VIGO InSchool (both only applicable for years 11-13)	National/regional education authority (using private services e.g., Amazon, Google, Microsoft, etc.) Private national provider (local company) on behalf of the education authority
Portugal (PT)	Website of Direção-Geral de Estatísticas da Educação e Ciência (DGEEC) and Pordata (platforms that aggregate education data and provide statistics) Student information is managed rather at school level (e.g., Inovart+) and then transferred to Ministry platform RCA (Repositório Central de Alunos)	National/regional education authority (own infrastructure) Private national provider (local company) on behalf of the education authority
Serbia (RS)	esDnevnik (for education records and student documentation by educational institutions) JISP (registry of educational institutions, accredited study programs, education employees and adult students and pupils)	National/regional education authority (using private services e.g., Amazon, Google, Microsoft, etc.)
Slovakia (SK)	aŠc EduPage (for communication with school, parents and children)	Private national provider (local company) on behalf of the education authority
	RIS - Portál (student and teacher data, also used for calculating normative school funding)	National/regional education authority (own infrastructure)
Slovenia (SI)	eAsistent	Private national provider (local company) on behalf of the education authority
	edus.si ePortal	National/regional education authority (own infrastructure)

Education System	Name of tool(s)	IT provider of the tool(s)
Spain (ES)	SÉNECA (Andalucia) EducamosCLM (Castilla-La Mancha) EduCarm (Murcia)	National/regional education authority (own infrastructure) Private national provider (local company) on behalf of the education authority
Sweden (SE)	Tieto Schoolsoft IST	Private national provider (local company) on behalf of the education authority Private provider (European company) on behalf of the education authority
Türkiye (TR)	e-Okul	National/regional education authority (own infrastructure)

* URL provided for each ESIS wherever available.

Private service agreements for ESIS

Out of the eight education systems (BE(fl), CY, FI, EL, RS, SI, ES, SE) that use privately owned software platforms, five (BE(fl), CY, EL, RS, ES) mentioned that they have negotiated specific conditions between the education authority and the private service provider to ensure that European Union principles and compliance is adhered. Three education authorities (FI, SI, SE) do not have such specific conditions negotiated and do not plan to negotiate any in the future.

In **Belgium (Flanders)**, General Data Protection Regulation (GDPR) compliance is required through Data Processing Agreements and the companies that provide Education and Student Information Systems are audited through data protection impact assessments (DPIA).

Cyprus's system eDEA (for public education) is commissioned, governed and owned by the Ministry of Education, Sport and Youth. Development and technical implementation may involve contracted vendors, under public procurement procedures, but governance and responsibility remain fully public. The underlying infrastructure is provided by the [Cyprus Telecommunications Authority](#) (CYTA), which is a semi-governmental organisation. The strategic

direction of eDEA prioritises public-sector control, compliance with EU data protection law, and avoidance of dependency on non-EU hyperscalers. Any private contractor involved in the development or support of eDEA is subject to strict contractual clauses covering GDPR compliance, data processing agreements, data localisation within EU jurisdiction, security certifications, audit rights by the ministry, and restrictions on data reuse. Negotiated elements include:

- Data ownership retained exclusively by the ministry
- No secondary commercial use of educational data
- Encryption at rest and in transit
- Role-based access control aligned with school governance structures
- Full compliance with EU's GDPR and national legislation
- Incident reporting obligations
- Disaster recovery and business continuity requirements

In **Greece**, the use of privately owned software or platforms at system level, co-financed through the European Social Fund, the Partnership Agreement for Regional Development Framework (ESPA) and the Recovery and Resilience Facility-funded education procurements, is subject to contractual and technical

conditions negotiated between the education authority and the service provider. These conditions require full compliance with EU law, in particular the GDPR, and include obligations on data protection, information security, lawful and transparent processing, risk mitigation, and safeguards for minors, ensuring that EU principles on safety, security and privacy prevail.

In **Serbia**, such requirements are defined in the terms and conditions of the public procurement services. Private companies may have been engaged in the development of the information systems, and they may rely on privately owned infrastructure. However, the concrete services are established and managed by the Ministry of Education, Science and Technological Development.

In **Spain**, the main elements negotiated with service providers focus on compliance with national and European regulatory frameworks, particularly regarding data protection, security, and privacy requirements. In most cases, all educational data and information are hosted on infrastructure owned and managed by the regional education authorities, while private companies provide only the software tools and technical development. Maintenance arrangements may vary depending on the specific platform. In some cases, maintenance and operation are carried out using the administration's own technical resources, while in others, maintenance services are contracted with the software developers under agreements aligned with applicable EU and national legislation. These agreements typically address service continuity, security standards, data governance, and compliance obligations.

In **Slovakia**, all private providers must comply with European legislation; otherwise, cooperation with the public sector is not permitted. If a system collects data about users, it is obliged to store it on servers located in Europe.

Apart from the provider of the tool(s), respondents to the questionnaire were asked who the provider of the underlying infrastructure is on which those tools are built. Three (BE(f), RS, SE) responded that they are not sure or do not know. 12 respondents (HR, CY, FI, FR, EL, LT, LU, NL, PT, SI, ES, TR) mentioned that the underlying infrastructure used is owned by the national or regional authority, five (EL, NL, NO, P, SI) mentioned that the cloud infrastructure is provided by a local company, and two (NO and FI) that the underlying infrastructure is provided by a European company¹. One (SK) responded that the private local provider stores all data in data centres located within the EU, but they do not publicly disclose the specific infrastructure provider that they use and exact server locations. One (PT) responded that the infrastructure is heterogeneous², made up of a combination of multiple solutions and procurement arrangements (local and national providers and international cloud services). Apart from Portugal, none of the education authorities that responded to the survey stated that the underlying infrastructure is provided by an international company. However, many of the products offered by the education authorities themselves, or by local and European companies, potentially use non-European cloud infrastructure based on Amazon Web Services, Microsoft Azure, etc. Non-European technology giants are often indirectly involved in European EdTech providers' products because they offer services such as cloud storage (e.g., Microsoft Azure), among others (Kerssens & van Dijck, 2024).

1 In Finland there is infrastructure provided both by a European company and a national/regional authority.

2 In Portugal, this reflects a digital infrastructure landscape that combines centrally managed systems with decentralised solutions adopted by schools, relying on multiple providers and diverse hosting and procurement models rather than a single unified infrastructure.

LEARNING MANAGEMENT SYSTEMS

Learning Management Systems (LMS) are the school equivalent of student information systems for administrators. They can be referred to with many different names (e.g. course management system, school information management system, school administration system, student information system, content management system) (OECD, 2023). In this report, they are defined as any software used for the administration, documentation, tracking, reporting, automation, and delivery of educational courses and programmes to students at school level.

All 17 education authorities that responded to the questionnaire confirmed that LMS are in use in schools across their systems.

What is evident from the data presented in Table 2 is that Microsoft 365 Education and Google Workspace for Education are the dominant LMS platforms used

by schools in the majority of the education systems represented in this publication. The fact that both of these platforms offer free, base-level tiers for eligible educational institutions (e.g., Office 365 A1, Google Education Fundamentals) might be a reason why they are so popular. However, although the free versions include core productivity tools, web-based apps, and classroom management features, more advanced security, extra storage, and premium tools require paid upgrades, which education authorities or schools with their own budget might be tempted to purchase. Another popular platform, used by education authorities and schools, is the open-source LMS Moodle, which allows for tailored development of LMS-type environments. Seven of the seventeen education authorities (HR, CY, LU, NL, PT, SK, TR) represented in this report offer system-wide LMS for schools, developed using their own infrastructure.

Table 2 - Learning Management Systems* and level of control.

Education System	Name of tool(s)	IT provider of the tool(s)
Belgium (Flanders) (BE (fl))	Smartschool Google Workspace for Education Questi	Private national provider (local company) Private provider (non-European company)
Croatia (HR)	Loomen Microsoft 365 Education Google Workspace for Education	National/regional education authority (own infrastructure) Private provider (non-European company)
Cyprus (CY)	Microsoft 365 Education eDEA Yiidme (School-based stand-alone programmes developed by ICT teachers, that will be replaced by the central eDEA system) Moodle	Private provider (non-European company) National/regional education authority (own infrastructure) National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.)
Finland (FI)	Microsoft 365 Education Google Workspace for Education	Private provider (non-European company)
	Peda.net (developed by the Uni. of Jyväskylä)	National/regional education authority (own infrastructure)

Education System	Name of tool(s)	IT provider of the tool(s)
France (FR)	<p>Éléa</p> <p>Primary education:</p> <p>ONE (virtual learning environment)</p> <p>Benelyschool (virtual learning environment)</p> <p>Secondary education:</p> <p>Skolengo</p> <p>Open ENT</p>	<p>National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.)</p> <p>Private national provider (local company)</p> <p>Private provider (European company)</p>
Greece (EL)	<p>digitalschool (under development)</p> <p>VET platform (under development)</p> <p>Kaledoscope (new resource aggregator for digitalschool, under development)</p> <p>photodentro (education resource aggregator)</p> <p>e-me</p>	<p>National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.)</p>
Lithuania (LT)	<p>TAMO</p> <p>Mano dienynas</p> <p>Microsoft 365 Education, Google Workspace for Education, Moodle</p>	<p>Private national provider (local company)</p> <p>Private provider (non-European company)</p>
Luxembourg (LU)	<p>Microsoft 365 for Education</p> <p>EduMoodle</p>	<p>Private provider (non-European company)</p>
Netherlands (NL)	<p>Primary education:</p> <p>Parnasy</p> <p>Esis</p> <p>Secondary education:</p> <p>Magister</p> <p>SomToday</p> <p>Both:</p> <p>Microsoft 365 Education</p> <p>Google Workspace for Education</p>	<p>National/regional education authority (own infrastructure)</p> <p>National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.)</p> <p>Private national provider (local company)</p> <p>Private provider (European company)</p>
Norway (NO)	<p>Minflyt</p> <p>Teknologi og programvare for skoler Microsoft Education</p> <p>Google for Education - Nettressurser for lærere og elever</p> <p>Hjem Moodle.org</p> <p>itslearning</p> <p>Læringsadministrasjonssystem</p> <p>Canvas (universities, e.g., Uni. of Oslo)</p>	<p>Private national provider (local company)</p> <p>Private provider (European company)</p> <p>Private provider (non-European company)</p>

Education System	Name of tool(s)	IT provider of the tool(s)
Portugal (PT)	EduQA LMS training platform NAU platform (primarily used for teacher professional development) Moodle (used by several schools in their own environments) Microsoft 365 Education Google Workspace for Education	National/regional education authority (own infrastructure) National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.) Private provider (non-European company)
Serbia (RS)	Microsoft 365 Education Google Workspace for Education	Private provider (non-European company)
Slovakia (SK)	VIKI Moodle Microsoft 365 Education	National/regional education authority (own infrastructure) National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.)
Slovenia (SI)	Arnes učilnice Microsoft 365 Education	National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.)
Spain (ES)	Microsoft 365 Education Google Workspace for Education Moodle (used by most Spanish Autonomous Communities to provide virtual learning environments) e.g., Moodle Centros (Andalucia) Aulas Virtuales de EducaMadrid (Madrid) Aulas Virtuales de Educacyl (Castilla y Leon)	National/regional education authority (using private services e.g., Moodle, Google, Microsoft, etc.)
Sweden (SE)	Tieto Schoolsoft ISTI Vklass Microsoft 365 Education Google Workspace for Education	Private national provider (local company) Private provider (non-European company)
Türkiye (TR)	EBA (Education Informatics Network)	National/regional education authority (own infrastructure) Private national provider (local company)

* URL provided for each ESIS wherever available.

All seventeen education systems confirmed that LMS by private providers are used to varying degrees. Twelve education systems (BE(f), CY, HR, FR, EL, LT, LU, NL, NO, PT, ES, TR) mentioned that they have negotiated specific conditions between

the education authority and the private service provider to ensure that European Union principles and compliance is adhered. In Sweden, procurement services are handled at the local authority level; therefore, if GDPR compliance is negotiated with the

service provider, this happens at local level. Three education authorities (FI, SK, SI) do not have such specific conditions negotiated and do not plan to negotiate any in the future. In Serbia, no information is available on negotiations between education providers and private LMS providers.

In **Belgium (Flanders)**, GDPR compliance is required through Data Processing Agreements and the companies that provide Education and Student Information Systems are audited through data protection impact assessments (DPIA).

In **Cyprus**, Microsoft 365 is fully deployed and licensed to public school teachers, and it includes Copilot and Teams. Microsoft 365 is also licensed to public schools' students along with Teams (but without Copilot). A Moodle LMS is hosted by the Cyprus Pedagogical Institute (a directorate of the Ministry) for teachers' professional development/training and other types of learning activities. Moreover, the Ministry runs a Moodle LMS for Primary School teachers and students for improving digital literacy and for preparation for international surveys. All these services are fully compliant with GDPR. Private schools have their own LMS platforms. Last, the eDEA ESIS is also progressively integrating and centralising LMS-type administrative functions.

France's national education authority provides [requirements and a legal framework](#), while the regional authorities enter into specific agreements with the private providers and municipalities pay for the service.

In **Greece**, full compliance with EU law, in particular the GDPR, is required for such agreements. These include obligations on data protection, information security, lawful and transparent processing, risk mitigation, and safeguards for minors, ensuring that EU principles on safety, security and privacy prevail.

In **Lithuania**, the requirements are defined in the terms and conditions of the public procurement services.

In **Luxembourg**, data residency and other GDPR relevant clauses are part of the contract with the private providers.

In **the Netherlands**, private organisations must adhere to European legislation, such as the GDPR. Compliance is actively checked and monitored through [data protection impact assessments](#) (DPIA).

In **Norway**, every school owner is obliged to have a data processing agreement with each provider. Points for negotiation are storage of data within Europe, protection of the identity of the students, access to data and the company's security routines.

In **Portugal**, platforms such as the EduQA LMS and the NAU platform are primarily designed for teacher training and professional development. While they may include functionalities typically associated with LMS (e.g. content delivery, assessment, and user management), they are not used as core platforms for managing student learning. Schools in Portugal widely use platforms such as Moodle (often locally hosted), Microsoft 365 Education (including Teams), and Google Workspace for Education to support teaching, learning and communication processes. These platforms constitute the main LMS ecosystem used in schools, although their adoption, configuration and hosting models may vary across school clusters. This reflects the fact that, in the Portuguese context, LMS for student learning are predominantly implemented at school level rather than through a centrally mandated LMS.

Schools (or school clusters) in Portugal act as data controllers and private vendors as processors under the GDPR and Portugal's Data Protection Law (Law No. 58/2019). Each school/cluster has a Data Protection Officer (DPO) who audits digital data use, advises on risks, initiates Data Protection Impact Assessments (DPIAs) when needed, and liaises with the Portuguese Data Protection Authority (Comissão Nacional de Proteção de Dados, CNPD). Contracts follow GDPR Article 28 with clear purposes, data categories, retention periods, confidentiality, sub-processor controls, security measures, audit rights, and data return/deletion. Where data leaves the European Economic Area (EEA), European Union Standard Contractual Clauses (SCCs) and supplementary safeguards are used.

Common platforms include Google Workspace for Education, Microsoft 365 Education, Moodle (self-hosted), Microsoft Teams, Google Meet, and sometimes Zoom, all configured with restrictive privacy settings. Agreements typically limit telemetry and non-essential processing, enforce encryption in transit and at rest, role-based access control, logging, incident response procedures, and transparent notices to the school community about legal bases and data subject rights. In Portugal, this reflects a digital infrastructure landscape that combines centrally managed systems with decentralised solutions adopted by schools, relying on multiple providers and diverse hosting and procurement models rather than a single unified infrastructure.

In **Serbia**, schools can decide which LMS platforms to use, which are mainly from private providers such as Microsoft 365 and Google Workspace for Education. Through teacher professional development courses and teacher resources, educators are informed about the available services and possibilities, but the final decision on their use rests with them.

In **Slovakia**, there is a national agreement with Microsoft to provide licences for all students and teachers in the country and a memorandum of cooperation in accordance with EU legislation. The national LMS system (based on the open-source platform Moodle) is managed by the National Institute for Education and Youth which is responsible for providing training for teachers. Only teachers have access to this system, and it does not cover educational courses for students. A new system is currently being tested, which will be based on Microsoft Azure.

In **Spain**, the use of privately owned platforms such as Google Workspace for Education and Microsoft 365 in schools is generally framed within institutional agreements established at the level of the regional education authorities. These agreements define the respective responsibilities of the administration and the service provider and include provisions related to data protection, security, and privacy, in line with applicable national and EU regulatory frameworks. In

addition, identity management services are typically provided through authentication systems operated by the public education authorities and remain independent from the private platform providers. This approach aims to ensure that access control and user identity governance are managed under public administration frameworks, reinforcing privacy safeguards and alignment with EU principles.

In **Sweden**, school owners (municipalities) require providers to provide a DPIA. However, the national education authorities do not have specific insights about the process.

In **Türkiye**, all externally procured services, such as content delivery network (CDN) are subject to national data protection law, cybersecurity standards, Service Level Agreement (SLA) requirements, business continuity provisions, and audit mechanisms. Main elements include data protection compliance, cybersecurity obligations, service availability guarantees, incident response procedures, and data localisation requirements. CDN services are provided by a national service provider under public procurement rules. Existing regulatory and procurement frameworks already ensure compliance and oversight for any external services.

Respondents to the questionnaire were also asked who the provider of the underlying infrastructure is on which those LMS are built. Three (BE(f), LT, SE) responded that they are not sure or do not know. Ten respondents (HR, CY, FR, EL, LU, PT, SK, SI, ES, TR) mentioned that the underlying infrastructure used is owned by the national or regional authority, three (FR, NL, PT) mentioned that the cloud infrastructure is provided by a local company, and four (FR, NO, PT, SI) that the underlying infrastructure is provided by a European company. Six (HR, FI, LU, NL, ES, including RS that stated use of Microsoft and Google services only) of the education authorities that responded to the survey stated that the underlying infrastructure is provided by a non-European company.

However, many others use such cloud technology as underlying infrastructure by offering – or allowing the use of – non-European products such as Microsoft 365 Education and Google Workspace for Education. Many more of the LMS products offered by local or European companies potentially use non-European cloud infrastructure based on Amazon Web Services, Microsoft Azure, etc.

ARTIFICIAL INTELLIGENCE AND DIGITAL INFRASTRUCTURE

AI service development initiatives

Respondents were asked whether there are examples of development, piloting or planning of AI tools as part of the national education digital infrastructure in the education system that are publicly governed. These examples could be either Education and Student Information Systems or Learning Management Systems. In thirteen education systems (BE(f), CY, HR, FR, EL, LT, LU, NL, NO, PT, SK, ES, TR) such examples exist, while four (FI, RS, SI, SE) responded negatively. Below are some of these efforts.

In **Belgium (Flanders)**, [Smartschool](#) is a digital school platform used mainly in Belgium to manage communication, assignments, grades, attendance, and learning materials between students, teachers, and parents. In recent years, Smartschool has started experimenting with AI to support schools in identifying potential learning or well-being problems at an earlier stage. The goal is not to automate education, but to help teachers notice signals that might otherwise be missed. The AI in Smartschool works by analysing existing data already present in the platform, such as login activity, participation, grades, and absences. By combining these elements, the system looks for patterns that may indicate a student who is struggling, disengaged, or at risk of falling behind. When such a pattern appears, the system generates a signal for the school. Importantly, the AI does not make decisions or judgments about students; it only highlights trends that may deserve attention. Any follow-up action remains entirely in human hands. Teachers, care coordinators, or school leadership decide whether and how to respond to a signal. Students and parents do not automatically receive AI-generated messages. Because this involves sensitive data, Smartschool has also faced public debate about privacy and ethics, and the company has stated that it is reviewing and refining its AI use in consultation with experts.

The core idea is to support teachers, not replace them, and to use AI as an early warning tool rather than an authority.

Besides this project in its analytics module, Smartschool uses AI to automatically analyse complex school data and turn it into clear insights. The Belgian company, based in Oudegem, offers this module as a support tool for schools to explore questions about student engagement, performance, attendance, and broader school trends. Schools remain in full control over access as they decide whether school leaders, teachers, parents, or even students themselves can view the analyses. The AI does not impose conclusions but helps visualise patterns and correlations that would otherwise be difficult or time-consuming to detect, making it easier for schools to reflect on issues beyond dropout risk and to base decisions on data rather than intuition alone.

As part of **Croatia's** [BrAln project](#), a smart recommendation system is being developed and integrated with the national e-Register (e-Dnevnik) to personalise student learning and improve educational outcomes. The system will analyse student data to identify learning patterns, affinities, and areas for development, supporting teachers with data-driven insights. The new [Informativka platform](#) will enable secure communication across the education system while enriching data sources. Using data mining and predictive analytics, the system will provide tailored recommendations for students, teachers, and parents, offering early alerts on behavioural or performance issues. Training for all stakeholders will ensure responsible and informed use, supported by robust infrastructure within CARNET's data centres to manage large-scale data and applications.

In **Cyprus**, AI functionalities are being considered within eDEA for predictive analytics (attendance patterns, early warning indicators), administrative automation, data-driven policy support, and smart

reporting dashboards. The planned AI integration focuses on:

- Risk detection (e.g. early dropout indicators)
- Data aggregation for evidence-based decision-making
- Workflow automation
- Pattern analysis within anonymised datasets

All AI use is expected to remain under public governance, aligned with National and EU regulation and policies including, GDPR, EU AI ACT, DSA and MoESY AI Policy and Guidelines for Ethical and Responsible AI utilisation in Primary and Secondary Education (<https://www.pi.ac.cy/aipolicy2025>). When it comes to LMS, Microsoft's 365 Copilot is fully deployed and licensed to ministry officials, school management, and teachers (primary & secondary education). Student licenses for Microsoft 365, for both primary and secondary education, do not include Copilot.

Small-scale piloting in secondary education has been deployed within the framework of the [AI4EDU](#) project (Artificial Intelligence for Education). The European project AI4EDU (Contract Number: 101087451), was part of the action 'Partnerships for Innovation - Forward Looking Projects' and brought together six partners from four European countries (Greece, Ireland, Cyprus and Sweden) with high expertise, complementary skills and experience, related to the interdisciplinary field of AI, with the aim of innovating school education by investigating, implementing and evaluating forward-looking, innovative research approaches, technologies and applications of AI in Education.

In **France**, [P2IA](#) is a nationally sponsored procurement, research, and development scheme (publicly governed) to develop AI-based learning services. This innovation partnership focuses on French, English and mathematics subjects for students aged between the end of primary education and the beginning of secondary education.

In **Greece**, publicly governed AI tools are being developed and planned as part of the national

education digital infrastructure through the project [Digital School](#), funded by the Recovery and Resilience Facility. The programme includes the development and piloting of AI-enabled educational tools, such as intelligent digital assistants, adaptive learning applications and AI-supported educational content, integrated into nationally managed platforms used at school level. These tools are governed by the Ministry of Education and are designed to operate within the existing national LMS and ESIS ecosystem, under public oversight and EU compliance requirements. EduAI is an AI-powered system designed to transform the digital tutoring platform into an interactive learning environment, delivering personalised exercises tailored to each student's level and needs. The project is currently in the call for proposals phase.

The Eduplan.ai is a publicly planned AI-powered information system that will be developed under the Ministry of Education, Religious Affairs and Sports in Greece and relevant European Social Fund calls to support predictive staffing and educational planning. It integrates data from key education and public systems and uses advanced analytics and artificial intelligence to forecast student population trends and staffing needs. The system enables data-driven decision-making for teacher allocation, simulation of staffing scenarios and optimisation of human resource distribution across regions. Its core objective is to shift from a reactive staffing model to a proactive strategic planning framework, improving efficiency, transparency and long-term educational policy design. The Eduplan.ai project is called 'Smart System for Predictive Staffing of Schools and Educational Policy' and uses AI algorithms to analyse teacher staffing needs and optimise the allocation of educators across regions, including difficult-to-staff and remote schools, based on real data and projections. It is intended to be part of the education information infrastructure and support decision-making in education policy and resource planning.

Lithuania is testing the use of IBM Cognus modules to analyse school text reports in the EMIS system. The Dubysa Upper Secondary School in Šiauliai District, together with the company Baltic Consol Line, is

developing a [digital analytics platform](#) to improve student achievement.

In the **Netherlands**, several new applications are being piloted in a [public-private partnership](#) under the [NOLAI-programme](#). In this programme, private companies, universities and schools work together to develop and test AI tools. These applications also include learning management systems (for example, a dashboard for teachers). The list in Table 3 is not exhaustive, as there are many AI tools, and schools are free to use whichever tools they feel suit their education needs, provided they adhere to EU and national legislation. Many of these tools are based on the LLMs and infrastructure of Google, Microsoft, OpenAI, etc. There is an open market that actively offers all kinds of educational materials and content (AI products being one of them).

Currently, in **Norway**, a simple chatbot is available for questions about the platform, but Visma (the provider company) is working on a tool to automate subject schedules and other useful management elements. The Norwegian Directorate for Education and Training (Udir) established a dedicated [theme](#) page for artificial intelligence in schools, which serves as a national hub for advice, guidance, and support to school owners and schools. Udir also published national AI guidelines for the school sector, with a clear emphasis on students' maturity, secure solutions, and the need for professional competence development among teachers and school leaders. The Directorate has developed a national competence package on AI, aimed at teachers, school leaders, and school owners. Since 2023, a number of municipalities have developed their own AI solutions for students and teachers, often based on Microsoft Azure or Google Gemini. These require Single Sign-On login using the national [Feide](#) system and comply with GDPR (e.g., [Randaberg](#)).

Portugal's [Ecosistema de Aprendizagem](#) - Learning Ecosystem (EA) is a strategic digital platform currently under development as part of Portugal's broader digital education strategy. The platform is intended to integrate digital curriculum resources and support

teaching and learning processes. Functionalities related to personalisation and AI are foreseen in its design. However, these features are still under development and are not yet operational (see: <https://ea.eduqa.pt>). It is developed within the framework of [Escola Digital](#) initiative to modernise education by integrating digital resources of the national curriculum. There is also the [Artificial Intelligence for Higher Education and Research](#) (IAedu) platform, developed by [FCT](#). It is primarily oriented towards higher education and research and therefore has limited relevance to school-level digital infrastructure. Finally, [Amália IA](#) is an open-source language model specifically developed for the Portuguese culture as a transversal initiative. While it may have potential applications in education, it is not currently integrated into school digital infrastructure systems such as ESIS or LMS.

Slovakia has developed a comprehensive strategy for implementing AI in education that includes teacher training, tool testing, the creation of recommendations, and learning by experience. The education authority is also focusing on promoting the topic through activities such as a hackathon and on implementing solutions. All schools and students aged 13 and older have access to Copilot as part of their Office 365 licences.

In **Spain**, several publicly governed initiatives related to AI are currently under development or piloting within the Spanish education digital ecosystem. One example, coordinated at national level through INTEF, involves the development of a publicly managed AI tool (see [press announcement](#)) intended to support the educational community. The initiative aims to facilitate the creation of educational resources, the personalisation of learning materials, and assistance in assessment and reporting processes, building on data and functionalities already available within the existing public education platform. At regional level, some Autonomous Communities are exploring AI integration within their education management systems. In Andalusia, an AI-related project is currently under development and testing phases, with a focus on improving administrative and educational

digital services, although it has not yet been broadly deployed in classrooms (see the [company page for more information](#)). In the Basque Country, a publicly governed AI-based assistant has been implemented to support teachers and staff by providing access to regional regulatory information and helping reduce administrative workload through guided responses to technical and organisational queries. In addition, the region has gone a step further by deploying AI-powered chatbots embedded within Moodle courses for teachers, designed to support educators directly during training processes by answering course-related questions and offering contextual guidance throughout the learning experience.

Türkiye has designed the New Digital Education Platform, as part of the renewal and modernisation of [EBA](#), as an AI-supported digital education ecosystem in line with the Ministry of National Education's National Artificial Intelligence Strategy. The platform supports learning processes through personalised learning experiences, intelligent content recommendations, and individualised study plans. Through the EBA Assistant developed within the platform, students receive personalised learning support, while teachers and school administrators are provided with analytics and decision-support mechanisms. In the field of assessment and evaluation, ongoing work focuses on the use of AI for the automated evaluation of open-ended questions.

In **Finland**, most AI activity is decentralised (municipal, institutional, or project-based) and not integrated into a single national system. There are still publicly funded initiatives, but they are typically ecosystem-level, experimental, or support-oriented (AI guidelines in education), not infrastructure-level.

Private providers of AI services

The seventeen respondents were asked whether – and if so, to what extent – private companies (e.g., OpenAI, Mistral, Google, etc.) offer AI-based products for educational use in their education system.

Figure 1 illustrates the number of education systems covered in this report with AI-based products offered for educational use by private companies. In only one system (TR), there are no AI-based products offered by private companies to schools at the moment. In ten education systems, AI-based products are piloted and/or offered by local national companies (BE(f), FI, FR, LT, NL, NO, PT, SI, ES, SE). In twelve education systems, AI-based products are piloted and/or offered by non-European companies (HR, CY, FI, EL, LT, LU, NL, NO, RS, SK, ES, SE). In eight systems (FI, LT, LU, NL, PT, SK, SI, SE), such products are offered by European companies.

The companies mentioned most by the respondents are non-European technology giants, i.e., Microsoft's Copilot, Google's Gemini and OpenAI's ChatGPT. Other AI-based products mentioned are listed below, per education system.

Figure 1 - Number of education systems with AI-based products offered for educational use by private companies.

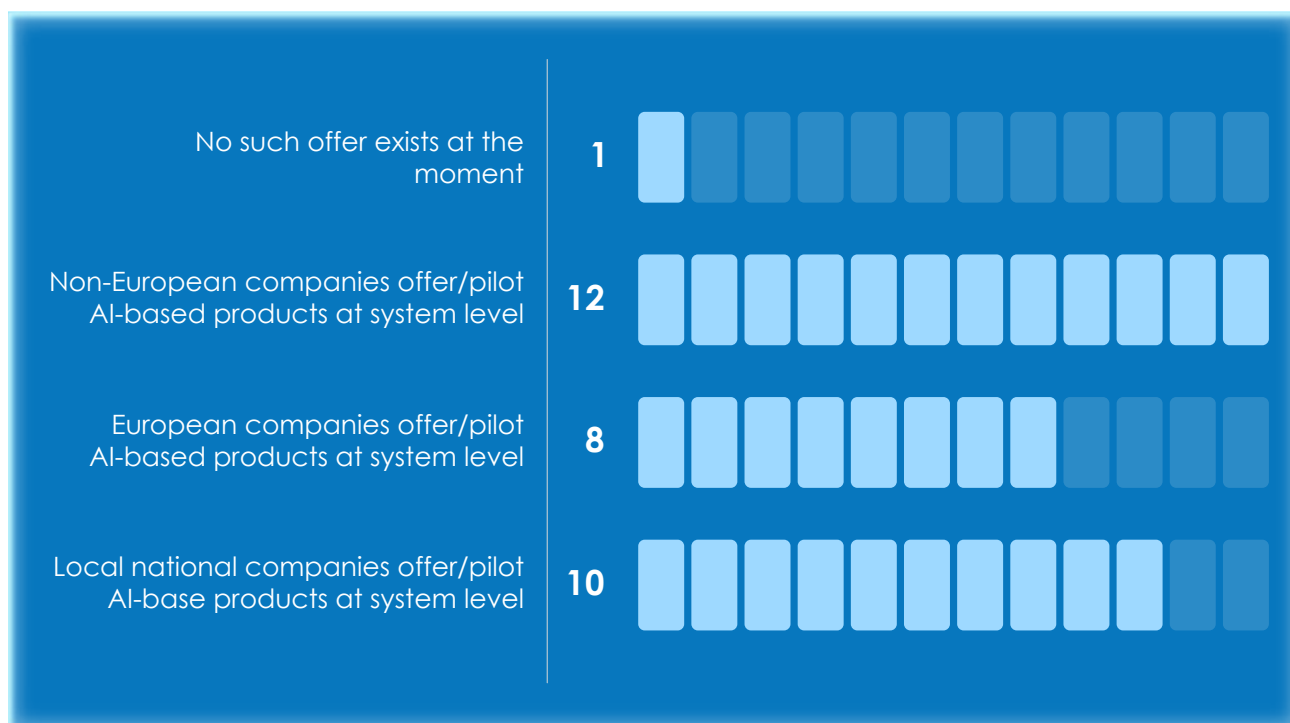


Table 3 - AI-based products offered for educational use in schools.

Education System	AI-based products offered for educational use in schools
Belgium (Flanders) (BE (fl))	Klascement (for automatic metadata provision and keywords)
Croatia (HR)	Microsoft's Copilot
Cyprus (CY)	Microsoft's Copilot
Finland (FI)	Better-ed Eduten ViLLE Claned Most used applications in schools: ChatGPT, Copilot, Gemini
France (FR)	PIX platform EDUSCOL
Greece (EL)	OpenAI's ChatGPT EduGPT (ongoing project using Open AI)

Education System	AI-based products offered for educational use in schools
Lithuania (LT)	Eduten LearnLab AI Spotiself EditAI Microsoft Copilot
Luxembourg (LU)	Fobizz Vitta Science Teachino
Netherlands (NL)	Google's Gemini OpenAI's ChatGPT Microsoft's Copilot Schoolgen SchoolHub Alfie
Portugal (PT)	Ecosistema de Aprendizagem (under development, a platform that aims to integrate curriculum resources with teaching and learning support functions) IAedu (FCT/FCCN) (for higher-education and research institutions) Amália IA (a transversal national LLM initiative, not yet integrated into school digital infrastructure such as ESIS or LMS).
Serbia (RS)	OpenAI's ChatGPT
Slovakia (SK)	OpenAI's ChatGPT Microsoft's Copilot
Slovenia (SI)	eAsistent Canva Microsoft's Copilot
Spain (ES)	Matthew AI TututorAI <p>In addition, in regions where institutional agreements with Google or Microsoft are in place, AI assistants such as Google's Gemini and Microsoft's Copilot may be made available to the educational community. Access conditions, scope of use, and user permissions vary across Autonomous Communities.</p>
Sweden (SE)	Google's Gemini Microsoft's Copilot
Türkiye (TR)	EBA

CONCLUSION

The survey results show that all seventeen participating education authorities use Education and Information Systems, often combining several platforms to address different administrative and learning needs. Among the eight systems using privately owned software, five (BE(f), CY, EL, RS, ES) have established specific contractual safeguards to ensure compliance with EU principles, while three (FI, SI, SE) have chosen not to pursue such agreements.

Every system reported that Learning Management Systems (LMS) are in use across their schools. Microsoft 365 Education and Google Workspace for Education emerged as the most common platforms, likely due to the availability of free baseline tiers. However, it seems like many countries upgrade to paid versions for enhanced security, storage or advanced features. Moodle continues to be widely used as a flexible, open-source alternative. In addition, seven systems (HR, CY, LU, NL, PT, SK, TR) provide a national LMS developed using their own infrastructure.

The use of LMS from private providers is widespread. Twelve systems (BE(f), CY, HR, FR, EL, LT, LU, NL, NO, PT, ES, SE, TR) have introduced specific conditions to ensure alignment with EU rules, while three (FI, SK, SI) have not negotiated such arrangements. In one case (SE), alignment with EU rules is negotiated at the local authority level, which is not monitored by the national authority. Approaches to infrastructure vary considerably. Some authorities rely on national or regional infrastructure, others on local or European cloud services, and several on non-European providers. Even LMS solutions developed domestically or within Europe might often operate on underlying global cloud technologies such as AWS or Microsoft Azure.

Most of the respondents (thirteen education systems: BE(f), CY, HR, FR, EL, LT, LU, NL, NO, PT, SK, ES, TR) report ongoing work to develop, pilot or plan AI-supported tools within their public digital infrastructure systems. Four systems (FI, RS, SI, SE) do not currently have such initiatives. At the same time, AI-based products from private companies are more present in schools. Only Türkiye reported that they do not use such tools. In ten education systems, AI-based products are piloted and/or offered by local national companies (BE(Flanders), FI, FR, LT, NL, NO, PT, SI, ES, SE). In twelve education systems, AI-based products are piloted and/or offered by non-European companies (HR, CY, FI, EL, LT, LU, NL, NO, RS, SK, ES, SE). In eight systems (FI, LT, LU, NL, PT, SK, SI, SE) such products are offered by European companies. Solutions from Microsoft, Google and OpenAI are the most popular, alongside a range of other local, European and non-European products.

When asked about their future needs, respondents highlighted the need to strengthen European capacities. Finally, responses indicate a broad support for further European Schoolnet initiatives and continued collaboration as digital and AI tools gain an increasingly central position in education all over Europe.

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