OPEN SCHOOL DATA IN EUROPEAN EDUCATION SYSTEMS



ETINED

Council of Europe Platform on Ethics, Transparency and Integrity in Education Volume 9



OPEN SCHOOL DATA IN EUROPEAN EDUCATION SYSTEMS

Council of Europe Platform on Ethics, Transparency and Integrity in Education (ETINED) — Volume 9

Authors Muriel Poisson Elira Jorgoni The opinions expressed in this work are the responsibility of the author(s) and do not necessarily reflect the official policy of the Council of Europe or IIEP-UNESCO.

The reproduction of extracts (up to

500 words) is authorised, except for commercial purposes, as long as the integrity of the text is preserved, the excerpt is not used out of context, does not provide incomplete information or does not otherwise mislead the reader as to the nature, scope or content of the text. The source text must always be acknowledged as follows: "© Council of Europe, year of the publication". All other requests concerning the reproduction/translation of all or part of the document should be addressed to the Directorate of Communications, Council of Europe (F-67075 Strasbourg

Cover design : Documents and Publications Production Department (SPDP), Council of Europe Layout: Pointillés

Cover photo: Shutterstock

Cedex or publishing@coe.int).

Council of Europe Publishing F-67075 Strasbourg Cedex http://book.coe.int

ISBN 978-92-871-9601-9 (Print) ISBN 978-92-871-9600-2 (PDF)

© Council of Europe, September 2025 Printed at the Council of Europe

Contents

ACKNOWLEDGEMENTS	7
FOREWORD	9
EXECUTIVE SUMMARY	11
Main findings	12
Main recommendations	13
INTRODUCTION	15
Purpose of the report	16
Methodology used	16
Structure of the report	17
CHAPTER 1 – OPEN SCHOOL DATA: DEFINITION AND CONCEPTUAL FRAMEWORK	19
1.1. Open data and the transparency agenda	19
1.2. Open education data and open school data: some basic definitions	20
1.3. Theoretical framework: finance, management and pedagogical accountability	21
CHAPTER 2 – OVERVIEW OF OPEN SCHOOL DATA INITIATIVES IN STATES PARTIES TO THE EUROPEAN CULTURAL CONVENTION	23
2.1. Data trends and maturity	23
2.2. States parties featuring open school data initiatives	25
CHAPTER 3 – MAIN FEATURES OF OPEN SCHOOL DATA INITIATIVES IN STATES PARTIES	27
3.1. Awareness, actors, duration and availability	27
3.2. Diverse implementation of open school data	31
3.3. Collection and publication of open school data	31
3.4. Audiences, variety of data types and availability	33
3.5. Comparability of data	37
3.6. Impact of policy frameworks	38
3.7. Perceived risks in publishing open school data	39

CHAPTER 4 – FACTORS INFLUENCING THE DEVELOPMENT OF OPEN SCHOOL	
DATA INITIATIVES AND BEST PRACTICES	41
4.1. Policy and regulatory frameworks	41
4.2. Data quality and standards compliance	42
4.3. Technological infrastructure and data management	42
4.4. Technology evolution and other areas of innovations	43
4.5. Stakeholder engagement and community involvement	44
4.6. Impact monitoring and evaluation	45
CHAPTER 5 – COMMON CHALLENGES AND BARRIERS TO THE IMPLEMENTATION	
OF OPEN SCHOOL DATA INITIATIVES	47
5.1. Decentralised governance structures	47
5.2. Data quality and standardisation	47
5.3. Outdated infrastructure and technology	48
5.4. Limited capacities and awareness	48
5.5. Resistance to change	49
5.6. Data privacy	49
CHAPTER 6 – MAIN FINDINGS AND KEY TAKEAWAYS	51
6.1. Summary of findings	51
6.2. Main takeaways	52
6.3. Areas requiring further investigation	53
6.4. Forward-looking recommendations	54
REFERENCES	57
APPENDIX 1 – DESCRIPTION OF OPEN SCHOOL DATA INITIATIVES	
IMPLEMENTED IN 19 STATES PARTIES	59
APPENDIX 2 – SUMMARY OF OPEN EDUCATION DATA AND OPEN SCHOOL DATA	
INITIATIVES IMPLEMENTED IN STATES PARTIES	69
ABBREVIATIONS	87

Tables, figures and boxes

Table 1	Overview of open education data-led initiatives in states parties	23
Table 2	Clustering of 35 European countries according to their open data maturity	25
Table 3	Distribution of European countries featuring open education and open school data initiatives	26
Table 4	Comparison of data types and availability	34
Figure 1	Organisation(s) developing open school data initiatives	28
Figure 2	Duration of open school data publication across countries	30
Figure 3	Main data sources for open school data	31
Figure 4	Main audiences for open school data	33
Figure 5	Dimensions of open school data collection	35
Figure 6	Suggested improvements for open school data	38
Figure 7	Perceived risks in publishing open school data	39
Box 1	Case study: France's case of open school data	28
Box 2	Case study: Reykjavik's approach to open school data	29
Box 3	Case study: England's Explore Education Statistics (EES) platform	32
Box 4	Case study: Lithuania's open school data initiative	36
Box 5	Case study: Serbia's open school data initiative	44

Acknowledgements

his report would not have been possible without the contributions and support of many individuals and organisations from the States Parties to the European Cultural Convention represented at the Steering Committee for Education (CDEDU) of the Council of Europe.

Through their participation in an online survey, they generously shared their insights and information, which provided the foundation for this report.

We are also grateful for the time and effort given by representatives of the organisations involved in open school data from France,¹ Iceland,² Lithuania,³ Serbia⁴ and the United Kingdom,⁵ whose valuable input through interviews and shared resources has deepened our analyses and enriched our findings.

We want to express our sincere gratitude to the Council of Europe's Education Department for closely supporting the process of implementing the research study and collecting survey responses from states parties.

We hope this report produced as a joint collaboration between the Council of Europe and UNESCO International Institute for Educational Planning (IIEP-UNESCO) will be useful to all stakeholders who are striving to create more open, participatory and transparent education systems.

Muriel Poisson and Elira Jorgoni

^{1.} Administration Ministérielle des Données, des Algorithmes et des Codes sources (AMDAC).

^{2.} Department of Education and Youth, Reykjavik.

^{3.} State Data Agency.

^{4.} Schools of Serbia initiative.

^{5.} Department for Education (DfE), Data Insight and Statistics Division.

Foreword

ince its launch in 2015, the Council of Europe Platform on Ethics, Transparency and Integrity in Education (ETINED) has been instrumental in promoting ethical practices and transparency across our member states' education systems. With this report, which is part of the ETINED series of publications, the Council of Europe, in collaboration with UNESCO International Institute for Educational Planning (IIEP-UNESCO), contributes significantly to the ongoing efforts to enhance good governance in education. At the Council of Europe, we are committed to upholding human rights, democracy and the rule of law – this report's focus on open school data underscores the critical link between these core principles and the provision of high-quality, transparent education for all.

In line with the Reykjavik Principles for Democracy, which emphasise participation, transparency and accountability, and the Council of Europe Education Strategy 2024-2030 "Learners First" – Education for today's and tomorrow's democratic societies, this report aims to empower policy makers, educators and the public by providing insights into the effective use of open school data. It is the result of dedicated research and collaboration, including valuable contributions from States Parties to the European Cultural Convention and in-depth case studies.

This report is a key component of ETINED's broader mission to share good practices and develop capacity building for stakeholders in education. It explores the development, implementation and impact of open school data initiatives, offering valuable insights on how such data can serve as a powerful tool for improving educational governance and combating corruption and fraud in the education sector.

Furthering our commitment to resilient and transparent education systems, this work complements other Council of Europe initiatives. The findings and recommendations presented herein will inform ongoing and future efforts to ensure that education systems across Europe are open, participatory and accountable to all learners.

I would like to extend my sincere gratitude to IIEP-UNESCO for its valuable collaboration and contribution to this publication. A thank you also goes to the many individuals, organisations and representatives from states parties who contributed their insights and information. I warmly commend this publication to all those engaged in building education systems that are not only efficient but also fair, participatory and accountable.



Villano QiriaziHead of the Education Department
Council of Europe

Executive summary

his report examines the developments and implementation of open school data initiatives across States Parties to the European Cultural Convention represented at the CDEDU of the Council of Europe.⁶ It provides an overview of the current state of open school data in Europe, highlighting key practices, challenges and innovations.

This report has been developed as part of a collaborative initiative between UNESCO International Institute for Educational Planning (IIEP-UNESCO) and the Council of Europe to explore the development, implementation and impact of open school data initiatives in states parties. Building on previous research undertaken by IIEP-UNESCO on open school data in other regions of the world,⁷ this report seeks to offer valuable insights and feed into the states parties or country-level discussions on how open school data can serve as a powerful tool for improving educational governance and combating corruption and fraud in education. The intended audience for this report includes policy makers, education administrators, civil society organisations and international development partners engaged in advancing transparency and accountability within the education sector.

Based on a thorough analysis of open school data initiatives in states parties, the report evaluates the publicly available data types, the governance structures supporting these initiatives, and their impact on educational systems. It also highlights the main challenges in implementing open school data policies and shares best practices in designing and implementing effective open data policies across the region. Findings are established from a triangulation of the results from a comprehensive desk review, an online survey carried out during September 2024 sent to all states parties as well as interviews with representatives from five countries with particularly advanced open school data practices⁸ to explore in more depth their experience, challenges and forward-looking plans.

^{6.} The list of States Parties to the European Cultural Convention represented at the Steering Committee for Education (CDEDU) of the Council of Europe who have nominated a delegate to the Council of Europe Platform on Ethics, Transparency and Integrity in Education (ETINED) is available at: www.coe.int/en/web/ethics-transparency-integrity-in-education/etined-national-delegates, accessed 27 July 2025.

^{7.} IIEP-UNESCO carried out international research on open school data which involved two state of the art papers in Africa and Latin America, as well as six case studies in Asia-Pacific (Australia, Bangladesh, India, Indonesia, Pakistan and the Philippines). All related materials are available on the ETICO platform of resources dedicated to ethics and corruption in education.

^{8.} Of these five countries, only Lithuania also participated in the online survey.

Main findings

The main findings of the report are as follows:

- ▶ Open school data initiatives have become increasingly common, emerging as part of broader efforts towards open government and transparency. Findings suggest that the central objective of open school data is perceived to be making educational data readily accessible to the public and fostering greater accountability. Governments are utilising their existing educational management information systems (EMIS) to make school-level data, such as financial information or performance indicators, accessible to the public. Nevertheless, the granularity and type of data shared differ considerably across countries, highlighting variations in governance models, available resources and technological capacities.
- ▶ The implementation of open school data varies across states parties. Five countries, namely Estonia, France, Ireland, Lithuania and the United Kingdom, have developed regulatory frameworks and comprehensive datasets that provide school-level data, including financial information, school infrastructure and academic results. Other countries, such as Albania, Bosnia and Herzegovina, Greece, Latvia and the Slovak Republic, are at an earlier stage of developing similar systems.
- ▶ Despite its potential benefits, open school data implementation is accompanied by challenges in all countries. Common barriers include outdated technological infrastructure, particularly in countries with less advanced digital capabilities. Additionally, policy makers and educators often lack capacities and awareness regarding the effective use of data to inform decision making. Resistance due to fear of increased scrutiny or data misinterpretation further hinders progress. Data quality is yet another key concern, as some countries struggle with incomplete, outdated datasets and inconsistent data standards. Lastly, there is a concern that exposing educational disparities through open data might reinforce inequities, especially for low-performing schools.
- ▶ Some countries are adopting innovative approaches to improve the accessibility and usability of open school data. For instance, the Netherlands and the United Kingdom integrate advanced technologies like application programming interfaces (APIs), artificial intelligence (AI) and chatbots to facilitate smoother data management. In countries like Belgium and Cyprus, collaborative policies have led to the adoption of "open by default" practices, making data automatically available to the public unless specific exemptions apply. These innovations highlight the potential of open data to create more efficient and user-friendly educational systems.
- While national governments and educational institutions continue to be the primary users of open school data, a growing engagement from parents, civil society organisations and local communities

is observed. In this context, in countries such as Ireland and France, initiatives are being implemented to cultivate a data-driven decision-making culture within educational institutions and among the general public. These initiatives help to ensure that open school data implementation is not just a tool for administrators with a limited scope to provide key metrics, but a resource instrument that fosters wider societal engagement and transparency.

▶ Further improvements are needed in several areas to realise the potential of open school data fully. These include enhancing national data portals to integrate a broader range of datasets and offer comprehensive insights into school performance. Investing in data literacy programmes for educators, policy makers, media and communities will ensure that available data are understood and effectively used. Lastly, developing standardised frameworks to measure the impact of open school data on educational outcomes appears essential for tracking progress and ensuring that such initiatives contribute meaningfully to educational reform.

Main recommendations

Several key actions are recommended to enhance the impact of open school data initiatives on transparency, accountability and the fight against fraud and corruption. These include developing basic principles and a clear guidance document on the development of open school data initiatives, improving the quality and comprehensiveness of educational data, designing public consultations and training programmes, integrating open school data concepts into school curricula, finding a balance between promoting transparency and protecting sensitive data, harnessing the power of emerging technologies, and capturing user feedback and tracking progress and impact. Finally, fostering exchanges and peer learning between states parties was underlined by several survey-participating countries and interviewed representatives as an effective approach to learning from various practices.

In conclusion, while open school data initiatives have made significant strides in recent years, there are still challenges to overcome. Addressing these obstacles and leveraging best practices can promote transparency, enhance accountability and improve educational quality across Europe.

Introduction

ver the past decade, public access to education data has significantly expanded, driven by advances in information technology and growing demands for transparency. The adoption of right-to-information laws, the data revolution and a culture of evaluation in public services have all contributed to the rise of open school data initiatives worldwide.

"Open school data" refers to the practice of making school-level information openly available to the general public, either in paper or electronic format, through school report cards. This covers the publishing of primary data disaggregated at the school level, including such items as school budgets, student enrolment, teacher numbers and qualifications, condition of school facilities, availability of textbooks and student test results (Poisson 2021a).

However, while legislation, accountability tools and software have been developed to improve transparency, open school data are not always available in easily accessible formats, and people are often unaware of how to access and utilise them. Moreover, sharing best practices in this area has yet to be realised in a useful and systematic manner.

In this context, during the 4th Summit of Heads of State and Government of the Council of Europe, heads of state and government reaffirmed their commitment to strengthening democracy and good governance at all levels throughout Europe, through the Reykjavik Principles for Democracy. One of these principles emphasises investing in a democratic future by ensuring everyone can participate in democratic processes. This includes prioritising the participation of young people in democratic life and decision-making processes, focusing on education about human rights and core democratic values, such as pluralism, inclusion, non-discrimination, transparency and accountability.

The Council of Europe Platform on Ethics, Transparency and Integrity in Education (ETINED) is poised to address such concerns, its mission being to share good practices in transparency and integrity in education, define guidelines on these subjects and develop capacity building for all stakeholders. In response to these needs, UNESCO International Institute for Educational Planning (IIEP-UNESCO) and the Council of Europe decided to launch a study on open school data in European education systems to explore the development, implementation and impact of open school data initiatives in states parties.

Building on previous research undertaken by IIEP-UNESCO on open school data in other regions of the world,⁹ the study seeks to offer valuable insights and feed into regional or country-level discussions on how open school data can

^{9.} IIEP-UNESCO carried out international research on open school data which involved two state of the art papers in Africa and Latin America, as well as six case studies in Asia-Pacific (Australia, Bangladesh, India, Indonesia, Pakistan and the Philippines). All related materials are available on the ETICO platform of resources dedicated to ethics and corruption in education.

serve as a powerful tool for improving educational governance and combating corruption and fraud in the education sector. The study focuses on States Parties to the European Cultural Convention represented at the Steering Committee for Education (CDEDU) of the Council of Europe and prioritises data published at the school level through school report cards¹⁰ – this school-level focus being key to empowering citizens to utilise the data and take informed action. The study excludes data from post-secondary education.

The intended audience for the report includes policy makers, education administrators, civil society organisations and international development partners engaged in advancing transparency and accountability within the education sector.

Purpose of the report

This report aims to help decision makers and educational managers make informed decisions about designing and implementing open education data policies. Its more detailed objectives are to:

- develop an evidence base for the most critical data needed and the most effective open education policies to improve government transparency and accountability in education;
- build the commitment and capacity of education officials in charge of access to information to develop access to practical, effective and usable educational data; and
- increase the level and focus of dialogue on open school data between educational stakeholders and the States Parties to the European Cultural Convention represented at the CDEDU of the Council of Europe.

Methodology used

The analysis combines findings from a comprehensive desk review, an online mapping exercise of existing initiatives in all states parties carried out by IIEP-UNESCO country by country, the results from an online survey conducted from July to September 2024 that was sent to all states parties (25 responses from 18 countries¹¹ were collected in total), and key findings from interviews with representatives from five countries with particularly advanced open school

^{10.} Poisson (2021a) refers to school report cards as the aggregation of information on the inputs, processes and/or outputs of an administrative level in the education system (school, education district or region), intended for internal and/or external use in school administration.

Albania, Andorra, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Georgia, Ireland, Lithuania, Malta, Monaco, North Macedonia and Türkiye.

data practices¹² in order to provide a deeper understanding of their experience, challenges and forward-looking plans.

Structure of the report

This report provides a comprehensive overview of the current state of open school data in states parties, highlighting key practices, challenges and innovations. More specifically:

- ► **Chapter 1** presents the conceptual framework linking open school data and transparency and accountability issues.
- ► Chapter 2 provides an overview of open education and open school data initiatives in states parties.
- Chapter 3 evaluates the publicly available data types, the governance structures supporting these initiatives, and their impact on educational systems.
- ► **Chapter 4** reviews the factors influencing the development of open school data initiatives and best practices.
- ▶ **Chapter 5** discusses the common challenges and barriers countries face in implementing open school data initiatives.
- ▶ **Chapter 6** summarises the main findings, identifies areas for potential development, and formulates recommendations for increasing the effectiveness of open school data initiatives in future.

Appendix 1 includes detailed information on open school data initiatives developed by 19 states parties, while Appendix 2 provides a summary of open education data initiatives implemented in all states parties.

^{12.} France, Iceland (Reykjavik), Lithuania, Serbia, United Kingdom (England). Of these five countries, only Lithuania also participated in the online survey.

Chapter 1

Open school data: definition and conceptual framework

his first chapter introduces a distinction between the notions of open education data and open school data. It also presents a conceptual framework making the link between open school data and accountability issues.

1.1. Open data and the transparency agenda

When open data are discussed, the focus lies primarily on "business opportunities and the various benefits that open (government) data holds for the economy and government, in particular with regards to fostering business innovation and efficiency gains" (European Commission 2018a). Less attention is given to societal dimensions, including how open data can benefit specific sectors such as education. Still, governments worldwide increasingly recognise the value of transparency and the potential for data to drive improvements in public services, including education (European Commission 2018b, 2020; OECD 2021). In this context, open education data initiatives have developed in all regions of the world, including in highly populated countries such as India or Indonesia (Poisson 2021a). These initiatives are often rooted in the broader open data and open government movements and the adoption of respective policies, which gained momentum in the early 2000s.

The increasing demand from citizens for greater transparency and enhanced quality and accountability in education services has been significantly driven by the new possibilities provided by information technologies. This has prompted countries to make education data openly accessible. As a result, the last decade has seen a growing trend in improving public access to education data and increasing the use of data to enhance governance in terms of openness, transparency and accountability. Various initiatives have flourished accordingly, consisting of the publication of school-level information in the form of school report cards¹³ either in paper or electronic format – "the school level being key to encouraging citizens to make the best use of and act upon the information provided" (Poisson 2021a). In many countries, governments have taken the

^{13.} School report cards/district report cards/regional report cards defined as "Aggregation of information on the inputs, processes and/or outputs of an administrative level in the education system (school, education district or region), intended for internal and/or external use in school administration", available at https://etico.iiep.unesco.org/en/reportcards#:~:text=Aggregation%20of%20information%20on%20the,report%20cards%2C%20 regional%20report%20cards, accessed 27 July 2025.

lead in disseminating such data, relying on existing educational management information systems (EMIS).

Open school data provide educators, policy makers, parents and communities with access to essential information. This includes student demographics, financial data, school facilities, teacher qualifications, curriculum details and, sometimes, school performance metrics. The primary aim is to promote transparency, accountability, and public engagement in the education sector (European Commission 2022). This process has contributed to evidence-based policy making and public engagement in the education sector. Yet, there is still much to learn about making open school data more valuable as a tool to hold education stakeholders accountable for quality education for all and to reduce malpractice (Poisson 2021a). By developing a strong data infrastructure, countries can guarantee that educational data remain reliable, up to date and accessible to all stakeholders, promoting a culture of ongoing improvement and trust (ibid.).

1.2. Open education data and open school data: some basic definitions

The European Union (EU) Open Data Directive (European Union 2019) emphasises the need for data to be made available in a way that is easily accessible, free of charge and usable for any purpose, including commercial use. These requirements resonate with the key principles of open school data (Poisson 2021b), underlining that open school data are considered "open" when ensuring that the data are primary, meaning they are collected directly at the school level without modification or aggregation with other data. The data must be accurate, undergo rigorous collection processes and controls, and be comprehensive, providing detailed and complete information with technical specifications available. Additionally, the data should be accessible to everyone without restrictions or registration requirements, free of charge, and timely, with regular updates to maintain their relevance. The principle of freedom of use allows the data to be used and reproduced freely for various purposes, such as information, management, control and analysis. Comparability and interoperability are also important, ensuring that data can be compared over time and across different schools and remain usable across various systems (ibid.).

In this context, "open school data" refers to sharing school-level information with the public in paper or electronic format (Poisson 2021a). Such data, which can be both quantitative and qualitative, can be used to monitor school services, ensure accountability of schools and education authorities, and support efforts towards inclusive and equitable quality education. Open school data can be presented as school report cards that compile various education metrics at the school level, including funding (inputs), teacher attendance (processes), student achievement (outputs), and qualitative details such as community participation (ibid.). While open education data can also be provided at broader administrative levels, the practice of open school data appears crucial for engaging citizens at the school level, since schools are directly involved in service delivery and are of immediate interest to the public.

Open school data and educational management information systems (EMIS) differ significantly in scope, content and purpose. EMIS is designed to aggregate data across all education system levels, serving education authorities' information needs for higher-level planning and administration, policy analysis, planning, monitoring and management (UNESCO 2018). In contrast, the practice of open school data targets the needs of frontline users (school principals, teachers, parents, students, civil society, researchers) (Poisson 2021a). Although open school data usually rely on EMIS data, they sometimes feature additional indicators to engage school-level stakeholders better and support school planning and management.

1.3. Theoretical framework: finance, management and pedagogical accountability

Implementing initiatives that support open school data in individual countries contributes to the 2030 Agenda for Sustainable Development and specifically to achieving Sustainable Development Goal 4 by promoting transparency and accountability in education, enabling data-driven decision making, and supporting inclusive and equitable quality education for all.

The Council of Europe's Education Strategy "Learners First" 2024-2030 (Council of Europe 2023) also emphasises the importance of leveraging data to improve educational outcomes and promote fairness across all levels of schooling. The strategy is based on three priority pillars, namely: renewing education's democratic and civic mission, enhancing its social responsibility and responsiveness, and advancing education through a human rights-based digital transformation. In this context, providing stakeholders with essential information that can be used to monitor school performance is expected to hold educational authorities accountable and ensure that resources are distributed more equitably. This reinforces the strategy's commitment to placing learners at the centre of educational reforms and utilising data-driven approaches to enhance educational systems across countries (Pillar 2 of this strategy: Enhancing the social responsibility and responsiveness of education).

Insights provided by previous research work carried out by UNESCO International Institute for Educational Planning (IIEP-UNESCO) in the area (Poisson 2021a, 2021b and various other sources from IIEP-UNESCO¹⁴) point out that the theoretical framework on open school data includes three main pillars encompassing financial, management and pedagogical accountability, as summarised below:

Financial accountability. Financial transparency in education can contribute to more equitable resource allocation and efficient use of funds. In this context, open financial data enable stakeholders to scrutinise how educational resources are distributed, ensuring that

^{14.} IIEP-UNESCO online resources on open school data are accessible from its ETICO online resource platform dedicated to ethics and corruption in education. See also: www.iiep.unesco.org/en/our-expertise/open-school-data, accessed 27 July 2025.

funding is timely, and correctly and equitably directed where it is most needed. Financial transparency can help identify and address disparities, particularly in underfunded regions, and supports the equitable provision of quality education across different schools and districts. Furthermore, it can help track funds and identify potential irregularities, misallocation or misuse of financial resources.

- ▶ Management accountability. Shared governance and institutional data can contribute to holding public authorities and schools responsible for management-related activities, such as teacher hiring, staff attendance, supervision of teaching and learning, and parental involvement (Poisson 2021a), thereby contributing to the standardisation, accessibility and quality of services delivered. Moreover, this information enables school administrators and policy makers to make informed decisions based on reliable data, which are critical for strategic planning, resource allocation and policy development.
- Pedagogical accountability. Open school data are also a powerful tool for enhancing pedagogical accountability. Accessible school performance data allow stakeholders to hold schools accountable for their educational outcomes and contribute to improving access and quality of education. By enhancing their data literacy, schools can better track student progress, identify areas for improvement and optimise their operations, leading to more efficient and responsive educational systems. More globally, school performance data can contribute to a culture of continuous improvement, where schools are motivated to improve their teaching practices and student outcomes to meet public expectations.

Finally, engaging with communities and stakeholders through the provision of free, accessible and understandable data helps promote trust and collaboration. It ensures that educational institutions remain accountable to the needs of students and parents, leading to better academic outcomes and greater equity.

Chapter 2

Overview of open school data initiatives in States Parties to the European Cultural Convention

his second chapter provides an overview of open education initiatives in States Parties to the European Cultural Convention represented at the Steering Committee for Education (CDEDU) of the Council of Europe. Taking into consideration their level of data maturity, it identifies 19 countries featuring open school data initiatives.

2.1. Data trends and maturity

A detailed review of existing online databases and portals (see Appendix 2) shows that 47 States Parties to the European Cultural Convention represented at the Steering Committee for Education (CDEDU) of the Council of Europe and its Platform on Ethics, Transparency and Integrity in Education (ETINED) implement open education data initiatives to share educational information – including performance metrics, school resources and financial data.

However, the scope and maturity of these initiatives vary. The main types of data released include student demographics, financial expenditures, teacher qualifications and school performance statistics. Data assessed is generally available through national open data portals, educational databases and institutional websites. Initiatives are often led by governments and ministries of education, sometimes in collaboration with research institutions, non-governmental organisations (NGOs) and international bodies. In a few cases, such initiatives are pioneered by local entities, especially capital cities.

Table 1 – Overview of open education data-led initiatives in states parties

Government/	Government/	Government/Local	Civil society/
National	Regional		National
47 countries	Spain	Iceland, Sweden	Germany, Serbia

Source: IIEP-UNESCO mapping exercise carried out in September 2024.

The results of the mapping of open education data conducted as part of this assessment have been triangulated with the literature review, which considers

the variation in open data practices across countries, including differences in data availability, quality, level of detail and accessibility. Regarding the granularity of available data, disaggregation in data reporting varies considerably across countries, influencing the overall effectiveness and utility of open data initiatives. Furthermore, data are released at different levels (national, regional, local and school) with varying degrees of detail and frequency.

Another useful source of information is the Open data maturity report 2022 (European Commission 2022), which offers insights into how countries implement and manage open data, reflecting regional trends and practices. The maturity assessment focuses on four dimensions:

- ▶ (i) **policy** evaluating the country's open data policies and strategies;
- (ii) impact examining how open data reuse is monitored and its effects measured;
- (iii) portal analysing the functionalities of national open data portals and community engagement; and
- (iv) quality assessing the mechanisms in place to ensure the quality of data and metadata.

Based on the findings, the report groups countries according to their level of open data maturity, tracking their progress, identifying improvement areas and comparing them with other nations. As part of this benchmarking exercise, countries are grouped into four clusters – an "exemplification and does not intend to generalise nor to represent the achievements and history of open data developments in the respective countries" (ibid.: 108). The four clusters are as follows.

- ▶ Trend-setters. These countries have advanced open data policies and strong co-ordination across all government levels. Their national portals offer extensive features for advanced users and publishers, with high-quality data publication and strong compliance with DCAT-AP (DCAT application profile for data portals in Europe) standards.¹⁵ Open data ecosystems are well developed, promoting significant interaction and reuse, with effective methodologies to measure impact and few restrictions on data publication or reuse.
- ▶ **Fast-trackers**. These countries demonstrate good maturity across all dimensions with strategies to enhance data quality and standards compliance. Though impact monitoring is limited, their national portals cater to both basic and advanced users. Efforts focus on boosting data reuse, and some issues persist, but measures are in place to address them.

^{15.} DCAT-AP is an extension of DCAT, developed by the European Commission, aimed at improving interoperability, discoverability and reuse of open data across European catalogues. Compliance with DCAT-AP involves assessing how well metadata aligns with the DCAT-AP standard for public-sector datasets, as well as efforts to help data publishers meet these standards (European Commission 2022; European Data Portal 2018 and 2019).

- ▶ **Followers**. These countries have basic open data policies and activities for co-ordination but offer limited portal features for advanced users. While some efforts are made to improve data quality, there is no systematic approach, and only minimal activities are conducted to monitor reuse and impact. There are still several restrictions on data publication and reuse.
- ▶ **Beginners**. These countries are at an early stage of open data maturity or have not developed as quickly as others. They have made limited progress in open data policies, with either no portal or one that needs servers and datasets. Activities to monitor reuse or measure impact are minimal or non-existent, and there are significant challenges in ensuring data quality and adopting standards like DCAT-AP.¹6

Table 2 shows the distribution of 35 selected European countries¹⁷ across those four clusters. Countries marked with an asterisk (*) are not one of the 27 EU member states.

Table 2 – Clustering of 35 European countries according to their open data maturity

Trend-setters	Fast-trackers	Followers (66%-82%)	Beginners
(91%-97%)	(87%-90%)		(18%-63%)
Cyprus, Estonia, France, Ireland, Italy, Poland, Spain, Ukraine*	Czech Republic, Denmark, Lithuania, Norway*, Slovenia	Austria, Belgium, Bulgaria, Croatia, Finland, Germany, Hungary, Luxembourg, Netherlands, Portugal Romania, Serbia*, Sweden, Switzerland*	Albania*, Bosnia and Herzegovina*, Greece, Iceland, Latvia, Malta, Montenegro*, Slovak Republic

Source: European Commission 2022.

2.2. States parties featuring open school data initiatives

The online mapping exercise of existing initiatives in all states parties carried out for this study showed that European countries exhibit a variety of approaches to implementing open education data initiatives. Of the 48 countries reviewed, only 19 feature open school data initiatives per se. Others share more aggregated education indicators with the general public. The distribution of countries according to those two categories, namely countries featuring open education initiatives and those featuring open school data initiatives, more specifically, is shown in Table 3 below.

^{16.} Ibid.

^{17. 35} countries participated, including the 27 EU member states, three European Free Trade Association (EFTA) countries (Iceland, Norway, Switzerland), four candidate countries (Albania, Montenegro, Serbia, Ukraine) and Bosnia and Herzegovina.

Table 3 – Distribution of European countries featuring open education and open school data initiatives

Countries featuring	Countries featuring open school data
open education initiatives	initiatives more specifically
(28)	(19)
Albania, Andorra, Austria, Armenia, Azerbaijan,	France, Germany, Iceland,
Belgium, Bosnia and Herzegovina, Bulgaria,	Ireland, Italy, Kazakhstan,
Croatia, Cyprus, Czech Republic, Estonia, Denmark,	Liechtenstein, Lithuania,
Finland, Georgia, Greece, Hungary, Latvia,	Monaco, Netherlands, Norway,
Luxembourg, Malta, Moldova, Montenegro,	Poland, Romania, Serbia, Slovak
North Macedonia, Portugal, San Marino, Slovenia,	Republic, Spain, Sweden,
Switzerland, Türkiye	Ukraine, United Kingdom

Source: IIEP-UNESCO mapping exercise carried out in September 2024.

The main characteristics of the open school data initiatives thus identified are further described in the following chapters.

Chapter 3

Main features of open school data initiatives in states parties

pen school data initiatives vary considerably country to country. In this context, chapter 3 describes current initiatives, comparing data types, sources, accessibility, and audiences, among other things, and analysing commonalities and differences. It builds on the results of the mapping exercise and survey carried out in preparation for this report.

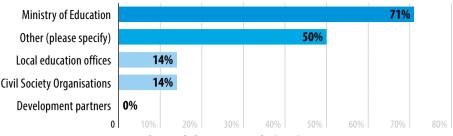
3.1. Awareness, actors, duration and availability

Findings suggest that most institutions across states parties have either worked with or are familiar with open school data initiatives being implemented; of the online survey respondents, 60% indicated they know about open school data initiatives in their respective countries. Of the 40% mentioning that they do not know about such initiatives, 9% indicated that they are being contemplated in their country, 36% that they are not, and 55% do not know. The variation in awareness echoes the uneven landscape observed across states parties, with countries such as Finland, Ireland, Italy, the Netherlands, Norway, Sweden and the United Kingdom (England), having established more mature open school data contexts, while others have less granular data or primarily institutional information without detailed performance metrics.

Ministries of education are the main drivers of open school data initiatives, as confirmed by 71% of survey respondents. They are followed by other organisations ¹⁸ (50%), local education offices (14%) and civil society organisations (14%), as shown in Figure 1.

^{18.} Several other organisations mentioned by survey participants have developed open school data initiatives. The National Centre for Educational Technologies manages educational data in Armenia under the Ministry of Education. Austria's Statistics Austria publishes education-related data, while in Belgium, it is the Flemish Inspectorate of Education, Flemish Higher Education Council, and Dutch-Flemish Accreditation and in the Czech Republic, the Czech School Inspectorate oversees school performance data. Finland's National Agency manages educational statistics. Lithuania's Information Society Development Committee also contributes, and in Türkiye, the Council of Higher Education handles higher education data initiatives.

Figure 1 – Organisation(s) developing open school data initiatives



Source: Online survey results (2024).

In England (United Kingdom), for example, school data are provided through two main portals, Get Information About Schools (GIAS) and the National Pupil Database (NPD), managed by the Department for Education (DfE). Similarly, the Ministry of Education in France (see Box 1 below) and Italy co-ordinate large-scale open school data initiatives, while other countries such as Estonia and Finland rely on their national statistical offices and agencies for data consolidation.



Box 1 – Case study: France's case of open school data

France's Administration Ministérielle des Données, des Algorithmes et des Codes sources (AMDAC), established in 2021, oversees open school data to enhance transparency and data accessibility. Initially launched in 2016, with regulatory requirements enforced in 2020, AMDAC aims to make educational data available and understandable to the public. A team of four manages data processing and publishing on the data.education.gouv.fr platform, which was redesigned based on user feedback to improve access and data quality. The platform offers visualisations, interactive maps and other tools for data analysis.

The 2024-2027 Action Plan¹⁹ seeks to strengthen data governance, expand datasets and integrate AI for user-friendly access while developing training programmes to build data literacy among educators and students, such as the "From education data to data education" programme engaging several partners, notably universities.

The main challenges include initial resistance from data contributors and a limited budget for data production and enhancement.

Key risks involve the media's potential to create misleading rankings based on the social position index (SPI), which could result in misinterpretations. Efforts towards transparency were recognised after the SPI was made available, emphasising that "data belongs to the public" and promoting collaboration across regions to advance open data in education.

^{19. &}quot;Le plan d'action 2024-2027 pour une politique ambitieuse de la donnée au service de l'éducation nationale, de la jeunesse et des sports" [The 2024-2027 action plan for an ambitious data policy serving national education, youth and sports], www.education.gouv.fr/le-plan-d-action-2024-2027-pour-une-politique-ambitieuse-de-la-donnee-au-service-de-l-education-340319.

The academic education regional platforms that are the most advanced in open data production include Occitanie, the Normandy region and the Grand Est region.

Source: Interview with representatives from AMDAC, 24 July 2024.

In decentralised systems such as Bosnia and Herzegovina, Germany, Iceland (see Box 2) and Spain, multiple authorities at different administrative levels contribute to and influence data practices, making harmonisation and national data levels more challenging.



Box 2 – Case study: Reykjavik's approach to open school data

Over a decade ago, Iceland underwent a decentralisation process, shifting school oversight from the Ministry of Education to individual municipalities. While this granted greater local control, many municipalities lacked the resources to effectively manage and evaluate educational data, creating challenges in maintaining consistent oversight.

The initiative aims to provide comprehensive data on student populations, teacher–student ratios, and preschool waiting lists in Reykjavik. Data are intended to support decision making, help school administrators and teachers improve their schools, and enhance transparency in the system. Centralising school data is crucial, particularly given the uneven distribution of resources across Iceland's municipalities. The goal is to streamline data management, allowing for better evaluations and consistent data across all schools.

Initially, data was aggregated annually from databases, but now Reykjavik receives real-time updates. The municipality also publishes student and parent survey reports and shares them with schools. A small team of two members manages the data warehouse, supported by Reykjavik's city data services for technical assistance. Analytical tools such as Power BI process and display data. The open data system helps identify underperformance or staff concerns, enabling schools to provide timely student support. It also assists with administrative tasks, such as managing preschool waiting lists.

The decentralisation has sparked controversy, particularly over concerns about transparency in Iceland's education system and the lack of standardised, comparable data across municipalities. Many argue that the absence of standardised assessments has lowered expectations, reflected in the municipality's declining Programme for International Student Assessment (PISA) scores. The Teacher's Association has expressed concerns over standardised testing and advocates for assessments that can be used at the teacher's discretion. Furthermore, tracking students across different schools and capturing data on school diversity and language instruction has proven challenging due to incomplete central records. Data discrepancies arise because Statistics Iceland collects data directly from educational institutions, bypassing municipalities.

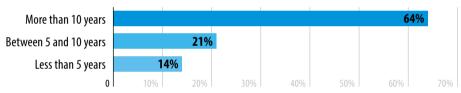
Reykjavik plans to implement a systematic evaluation system within the next three years and develop a dashboard to monitor children's well-being, teacher performance, and educational outcomes. The municipality also aims to centralise all educational data in one location for easier access and management.

Finally, efforts are also being made to encourage schools to engage more actively with student and parent survey results, promoting collaboration in improving educational environments.

Source: Interview with the Team Leader of Statistics, Performance and Quality Assessment and Deputy Head of Office, School and Leisure Division, 29 August 2024.

Based on their self-reporting through the online survey, of the 14 states parties declaring having open school data initiatives, 64% have had systems in place for over a decade,²⁰ indicating a long-standing commitment to transparency (see Figure 2 below). Others have had their systems for five to 10 years²¹ (21%) or less than five years²² (14%).

Figure 2 – Duration of open school data publication across countries



Source: Online survey results (2024).

Analysis of survey findings reveals that 64% of the participating countries²³ shared that they have legal requirements in place, mostly integrated into existing laws, supporting the publication of open school data, which helps strengthen consistency and compliance in data publication. Other countries (36%) operate without a specific legal framework based on stakeholder engagement and voluntary initiatives.

Countries like England (United Kingdom), Finland, Ireland and Norway illustrate this long-term commitment, with frameworks continually evolving to support greater transparency, accountability and data reuse. Furthermore, recent initiatives, such as Albania's management information system for pre-university education (SMIP), launched in 2022, signal growing interest in adopting digital tools to enhance data availability, even if these tools have yet to provide public access to school-level data.

^{20.} Armenia, Bosnia and Herzegovina, Denmark, Estonia, Finland, Ireland, Lithuania and Türkiye.

^{21.} Austria and the Czech Republic.

^{22.} Belgium and Georgia.

^{23.} Including Armenia, Belgium, the Czech Republic, Denmark, Estonia, Lithuania and Türkiye. In Austria, the legal requirements are planned to be completed in 2025.

3.2. Diverse implementation of open school data

While some states parties are considered trend-setters (European Commission 2022) with comprehensive policies and well-developed open school data ecosystems, others are considered beginners. Some states parties, especially those aligned with the EU Open Data Directive, exhibit sophisticated open school data ecosystems. For instance, the Netherlands provides APIs for data access, enabling developers to create applications that harness publicly available educational data. England's NPD offers a longitudinal pupil-level dataset (with controlled access) supporting detailed research into educational outcomes. France's data.gouv.fr and Italy's Portale unico dei dati della scuola platforms integrate performance metrics and, in some cases, financial information. At the same time, Sweden's Skolverket provides insights into educational outcomes and associated costs at school and municipal levels.

Countries at an earlier developmental stage share only basic institutional information without an in-depth analysis of performance or resources. Others have national statistical databases with education data but lack disaggregated, school-level performance indicators or user-friendly data portals with interactive tools.

3.3. Collection and publication of open school data

States parties participating in the online survey shared that government-led EMIS initiatives are the primary source of school data, accounting for 71% of responses, as shown in Figure 3. The second most common source, chosen by 43% of respondents, falls under the "Other" category, which includes national data systems, ²⁴ school-provided data²⁵ and accreditation and education councils. ²⁶

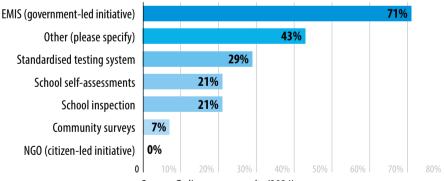


Figure 3 – Main data sources for open school data

Source: Online survey results (2024).

^{24.} Finland's KOSKI – national registry and data transfer service for study rights and completed studies; reference is made also to Austria's yearly federal school statistics combined with other separate databases.

^{25.} In Türkiye some data are provided by schools; Denmark receives reports and data from schools and local authorities.

^{26.} Dutch-Flemish Accreditation Organisation (NVAO) and Flemish Higher Education Council (VLUHR) in Belgium.

Most open school data thus originate from government-led initiatives. Mandatory reporting and legal frameworks ensure reliable and consistent data collection in many European countries. For example, Ireland's and Italy's open data policies mandate that educational data be machine-readable and regularly updated, while Finland's Vipunen education statistics portal emphasises data accuracy and consistency. England's GIAS provides regularly updated information on school types, governance structures, and institutional histories, supplemented by Ofsted reports and financial data accessible through separate portals. The NPD enhances these offerings by providing accredited researchers with granular, anonymised pupil-level data. See Box 3 below for more information.

In this context, primary school data sources come from government-led initiatives, accounting for 69% of responses. "Other" sources, selected by 46% of respondents, rank second. For example, the KOSKI national registry manages data on study rights and completed studies in Finland. Türkiye relies on some data directly from schools, while Belgium gathers data through the Dutch-Flemish Accreditation Organisation (NVAO) and the Flemish Higher Education Council (VLUHR). Austria collects yearly federal school statistics and integrates them with other databases, and Denmark receives reports and data from schools and local authorities.

Additional data from accreditation councils, satisfaction surveys and labour market success metrics enrich the data landscape in countries like Belgium and Estonia. Others (for example Austria and Denmark) combine data from government agencies, schools and local authorities; in other cases, countries (for example Ukraine and Georgia) often provide basic school information, focusing on names, locations and programmes with less comprehensive performance or financial data.



For over 30 years, England has published official education statistics. In 2018, a user research project was initiated to improve data accessibility and understand user needs. This led to the development of the Explore Education Statistics (EES) platform, launched in March 2020 during the Covid-19 pandemic. The EES was designed to enhance the public's ability to access education data while streamlining the data publication process for statisticians. The platform was developed to comply with England's Code of Practice for Statistics. Its objectives were twofold: first, to make education data more accessible to users, allowing them to find, explore and extract the data in different formats; second, to simplify and expedite the publication process for statisticians within the Department for Education. The data on the platform are sourced directly from schools, local authorities and other educational providers, primarily as administrative data.

The platform is supported by 40 different analyst teams across the department, a dedicated team of 10 full-time staff, and 180 staff members involved in data operations.

The EES platform has brought several benefits. It has improved efficiency by automating many data collection and publication aspects, reducing the time and resources required. Users can now access a wide range of standardised data in a machine-readable format from one centralised platform. This has made it easier for various stakeholders, including schools, local authorities and researchers, to navigate the data. While the platform has generally been well received, long-time users accustomed to older formats such as Excel spreadsheets or PDFs initially resisted. However, continued user testing and feedback have led to improvements in both functionality and ease of use.

The platform has faced challenges, particularly in negotiating new data collection and obtaining data from private schools, many of which manage their data independently. Standardising data publication across different teams within the Department for Education also required extensive collaboration.

Looking ahead, plans are to integrate real-time data from school management systems, enabling daily updates. Additionally, the platform will soon feature an API to allow other departments to use the data, and AI-driven search tools are being explored to enhance user experience further. In addition to these innovations, the platform employs disclosure controls to protect sensitive information. It also supports the Compare School and College Performance tool, an accountability measure that allows for benchmarking and comparison. Overall, the EES platform represents a significant advancement in making education data in England more accessible and valuable for a wide range of users.

Source: Interview with Data Insight and Statistics Division representatives, Department for Education, 28 August 2024.

3.4. Audiences, variety of data types and availability

The survey results show that central government or ministries of education are the primary audience for open school data (86% of responses, see Figure 4), followed by sub-national education authorities (71%) and parents/communities (79%). While national-level policy makers remain the primary users, parents and local communities remain engaged, along with education institutions, researchers, students, schools, the media, NGOs, companies and the general public. They also engage with these datasets, although their capacity to leverage the information varies widely across countries.

Central government/Ministry of Education
Sub-national education authorities
Parents and communities
Other (please specify)
0 10% 20% 30% 40% 50% 60% 70% 80% 90%

Figure 4 - Main audiences for open school data

Source: Online survey results (2024).

The primary data types released across states parties, summarised in Table 4, include student demographics and enrolment, school infrastructure and facilities, financial data, teacher numbers and qualifications, and school performance metrics.

According to 63% of survey respondents, these datasets are generally available through national open data portals, educational databases and institutional websites. Yet, the data's granularity, frequency and reusability differ significantly. Some countries with emerging open data practices primarily offer basic institutional information or aggregated statistics at the national level, with limited access to detailed school-level data.

Others, like Azerbaijan and Moldova, present enrolment figures, teacher counts and general indicators but have yet to provide more nuanced performance metrics or contextual information at the school level. And altogether, only 18 countries gather some data on private schools.

Table 4 – Comparison of data types and availability

Student demographics and enrolment (21)	Financial data (12)	School infrastructure and facilities (20)	Teacher numbers and qualifications (16)	School performance metrics (15)
Austria, Estonia, France, Germany, Iceland, Ireland, Italy, Kazakhstan, Liechtenstein, Lithuania, Monaco, Netherlands, Norway, Poland, Romania, * Serbia, Slovak Republic, Spain, Sweden, Ukraine,** United Kingdom	France, Germany, Ireland, Italy, Liechtenstein, Lithuania, Netherlands, Norway, Poland, Sweden, Ukraine, United Kingdom	Estonia, France, Germany, Iceland, Ireland, Italy, Kazakhstan, Liechtenstein, Lithuania, Monaco, Netherlands, Norway, Poland, Romania, Serbia, Slovak Republic, Spain, Sweden, Ukraine, United Kingdom	France, Germany, Iceland, Ireland, Italy, Liechtenstein, Lithuania, Netherlands, Norway, Poland, Serbia, Slovak Republic, Spain, Sweden, Ukraine, United Kingdom	Belgium, France, Germany, Ireland, Italy, Kazakhstan, Liechtenstein, Lithuania, Netherlands, Norway, Poland, Slovak Republic, Sweden, Ukraine, United Kingdom

^{*} Latest data available online are up to 2021.

Source: Survey and mapping results carried out by IIEP-UNESCO in September 2024.

All states parties participating in the online survey share data on the number of students, making it the most universally gathered and accessible type of school data. Additionally, the number of teachers and data on repetition, dropout and promotion are widely prioritised, with 71% and 64% of countries, respectively, recognising them as the primary metrics for understanding school performance and outcomes (see Figure 5 below).

^{**} Only information about general secondary education is available.

100% Number of students 64% Repetition, dropout, promotion Number of teachers 71% Student attendance 57% Student test scores 57% Teacher qualification 50% **50%** School capital expenditure School facilities 57% Transition rate to secondary 50% **50%** School equipment Textbooks 50% 36% Student socio-economic profiles 36% Funding sources 36% School inspection 36% School safety 36% Other data (please specify what type) 29% School income Teacher attendance 21% Parental satisfaction 21% 14% Amount of school fees Community involvement 14% 30% | 40% | 50% | 60% |

Figure 5 – Dimensions of open school data collection

Source: Online survey results (2024).

Beyond these core indicators, several countries collect additional or more specialised school data. Austria, for instance, compiles details on school addresses, class numbers, student residences, and the locations of previous and future schools. Belgium conducts comprehensive school screenings every six years, investigating quality development, teaching practices, guidance, personnel policy, safety and pupil inclusion. Estonia collects data on student and teacher satisfaction, class sizes and labour market success. Finland gathers information on language and subject choices, with data filtered by the type of education provider, focusing more on providers than individual schools.

While some countries, such as Lithuania (see Box 4 below for more information) and Luxembourg, provide school-level data that enable comparisons and deeper insights, others focus on national or regional aggregates that mainly serve policy makers and researchers rather than local communities or parents.

In countries like Ireland, Italy, the Netherlands and Sweden, public portals facilitate user-friendly access to a wide array of indicators, including performance, expenditure and demographic data, using visualisation tools and filters for tailored analyses.

Meanwhile, Switzerland and England stand out for integrating financial information, school characteristics and, in England's case, longitudinal pupillevel data under controlled access for research purposes.



◎ Box 4 – Case study: Lithuania's open school data initiative

In 2020, during the Covid-19 crisis, Lithuania identified the need for better data management. As a result, the Law on Statistics was updated, granting Statistics Lithuania authority over managing state data. In 2021, Statistics Lithuania became the central body for helping public institutions open their data to the public.

A critical development was the creation of a public dashboard showcasing open data, specifically from schools. This initiative was not pre-planned but resulted from experimentation by data analysts at the State Data Agency, aiming to demonstrate how open data could be presented in a more user-friendly and insightful format beyond simple datasets. The primary goals of the dashboard were to experiment with registering, storing and publishing open data and to illustrate how data can be made engaging with analytical insights and visual presentation.

The Law on Official Statistics was revised in 2020, introducing data governance. Amendments in 2021 aligned the law with the European Data Act, promoting open data. By 2023, the law had been expanded to allow government institutions access to microdata for analysis. The National Education Agency collected and stored educational data, supported by European Commission funding to develop open data access. The data was aggregated in the State Data Lake, a secure platform with Python and R programming languages and business intelligence (BI) tools. Lithuania's open data policy allows anyone, including companies, individuals or NGOs, to request access.

Government institutions now use microdata for decision making, improving governance and transparency. The State Data Lake fosters a self-regulating environment, driving improvements in data accuracy. Public access to data supports better-informed legislation and accountability. Despite minimal user feedback and slow media adoption, there is a gradual shift towards using more advanced data visualisations, such as time series and graphs, in reporting. The State Data Agency offers monthly tutorials for government employees, fostering the growth of small analytical teams within ministries and agencies.

Some challenges, such as significant time spent clarifying data structures, were identified. Different agencies often use varied methodologies for dashboards, which can be confusing. A lack of centralised access to dashboards and the potential for reputational risks also pose challenges. To manage demand, the agency has been cautious in promoting open data.

The platform has integrated AI technologies like open AI GPT 3.5 and 4.0, though ethical concerns limit their full use. The agency is also developing a public metadata catalogue to improve data transparency. Additionally, Lithuania developed another school data dashboard, RSVIS, with analytics on teachers, students and resources. These efforts reflect Lithuania's commitment to enhancing data accessibility and transparency. The State Data Agency continues to promote data usage by maintaining monthly quotas for opening new datasets.

Source: Interview with representatives from the State Data Governance Agency, 23 July 2024.

The frequency of data updates varies significantly among countries. Most survey-participating states parties (57%) collect school data annually, and only 23% of them gather data more frequently, with some opting for monthly or semester-based collection schedules. Statistical yearbooks are the most common method of publishing school data, used by 71% of countries responding to the survey, or alternative strategies (57%), including interactive websites and maps accessible to the general public, reports or digital platforms, followed by the use of online school report cards (14%), and school noticeboards (7%) to display data. More developed systems, as seen in Finland, Italy, the Netherlands and Sweden, offer interactive dashboards, APIs and timely updates that support more sophisticated data interaction and reuse. Conversely, systems in some countries remain static or fragmented, with limited comparability or user-friendly features.

3.5. Comparability of data

The analysis shows that all survey-participating countries allow comparisons between schools within the same district. Most of them (90%) enable comparisons between similar schools and offer year-to-year comparisons (80%) for tracking individual school progress. Some countries (50%) allow comparisons against set standards. An interesting case is that of France, which uses a Social Position Index (SPI) that allows comparisons between schools sharing similar socio-educational characteristics. Finland is the only country that restricts comparisons on student-level data and specific topics due to privacy concerns. In the case of Ireland, the system directs comparisons to avoid creating competitive "league" tables between schools.

In many countries, there is a growing interest in training head teachers, parents and the media to interpret data accurately and responsibly, as well as suggestions to expand current capacity-building programmes. According to survey results, training programmes on how to use data remain indeed limited, with only 42% of respondents indicating the existence of such programmes for school principals, 33% for teachers, and 17% for parents and communities.

Figure 6 below summarises some suggestions from the participating countries in the survey on improvements to the presentation of school data.

Clearer and simpler reports to improve understanding of the data

More dynamic visuals

Better access and findability (e.g. school websites)

Publishing in other languages

More frequent updates

Give more access to school leaders

4

4

4

4

6

Give more access to school leaders

Figure 6 – Suggested improvements for open school data

Source: Online survey results (2024).

Regarding the effectiveness of open school data, the main elements identified are comprehensibility, the capacity to produce accurate and timely data, accessibility, the capacity of the school to act on information, and the capacity of parents and communities to act on information. Political will was also mentioned as one of the factors affecting the effectiveness of open school data.

3.6. Impact of policy frameworks

Implementing mathematical models in the database

In general, countries with advanced open data policies including for education, such as Finland, show better co-ordination across government levels and more robust data publication practices. These environments support not only policy makers but also community stakeholders, parents, and NGOs who seek to understand and act upon education data. They typically offer high-quality data publication, strong compliance with standards, and significant data interaction and reuse.

Among the most critical open school data for improving transparency and accountability are considered to be community involvement and student attendance, followed by the number of teachers and teacher qualifications, parental satisfaction, school inspection, school safety, school facilities and school equipment. Most respondents (86%) agree that having open school data significantly improves school management. Additionally, others (76%) highlight that open school data enable citizens to evaluate the quality of teaching and learning, marking it as the second most impactful benefit. Finally the use of open school data to question the adequacy of facilities and the availability of equipment come in third place (66%).

Survey respondents confirmed that legislative requirements drive their open school data efforts, followed by political initiatives, funding links, transparency and local management/public oversight. Other influences, such as Ireland's

emphasis on knowledge-based management, or the Netherlands' and Belgium's integration of APIs, reflect growing interest in broadening both the scope of data and its ease of use.

3.7. Perceived risks in publishing open school data

While the diversity and accessibility of open school data have grown, concerns about privacy, misuse and unintended effects persist. Most of the participants in the online survey (71%) believe that some types of data, such as data that can personally identify students and teachers, grade-related data (20%) that could negatively impact students, and data leading to school comparisons (7%), should be withheld to prevent misuse. The main risk, cited by all survey respondents, is that parents may choose to enrol their children in another school based on published data (Figure 7). Additionally, some 89% of respondents are concerned that publicly available data might highlight disparities in resources, performance or outcomes, which could lead to stigmatisation or further challenges for underperforming schools. These results show that survey-participating countries perceive that open school data might unintentionally drive parents away from schools that appear less competitive or under-resourced, possibly widening inequalities between institutions.

Other risks mentioned are potential tensions among parents and the community expressing frustration regarding the published results and their capacity to act upon the information shared, privacy concerns and misuse of data (including by populist movements), and the danger of minimising the educational outcomes to just metrics, ignoring other qualitative factors such as school culture or student well-being. Finally, while there is a broad consensus that open school data can promote transparency, there are concerns that it must be carefully managed to avoid unintended consequences such as highlighting disparities between schools or encouraging biased decision making among parents.

Parents choosing to enrol their child 100% in another school Disparities between schools highlighted 89% Tensions between school authorities 67% and parents/community Frustration on behalf of parents/community 56% to not have the capacity to act upon information Tensions between teachers 44% and parents/community Other (please specify) 33%

Figure 7 – Perceived risks in publishing open school data

Source: Online survey results (2024).

Finally, respondents provided additional insights regarding open school data, emphasising the importance of distinguishing between publicly accessible data and restricted data on individual schools, students and teaching staff, while ensuring compliance with privacy regulations. Public data are viewed as a tool to improve educational quality and management, with platforms providing visualised data to support decision making. Open school data are also seen as a way to monitor school operations and ensure accountability, especially where direct supervision has decreased. Transparency is highlighted as a powerful tool against corruption despite potential risks. Some comments also note that the population size and institutional capacity must be carefully considered when aligning with international standards, and others suggest that open school data could be enhanced by including assessments of student well-being to provide a more comprehensive view of school quality.

Chapter 4

Factors influencing the development of open school data initiatives and best practices

he desk review and mapping of the states parties' approaches show that open school data initiatives vary widely, influenced by national policies, technological capabilities and resources, stakeholder engagement and specific educational needs, as detailed in this fourth chapter.

4.1. Policy and regulatory frameworks

The presence of policy and regulatory frameworks is a driving factor in adopting and implementing open school data initiatives. Nearly 70% of survey-participating countries have legal requirements for regulating open school data, reflecting a structured, long-term approach.

For instance, countries implementing policies arising from regulations such as the EU Open Data Directive are more likely to comply with open data requirements in public-sector data, including educational data. Such policies, including the nationally adopted policy and regulatory frameworks, mandate data publication and provide guidelines on data reuse and accessibility. The EU directive has encouraged member states like France and Germany to establish comprehensive policies supporting data sharing and reuse, thereby contributing to standardising open data practices across the EU. At national level, Italy's open data policy is guided by the Code of Digital Administration, which sets out guidelines for the digitalisation of public administration, including the management and dissemination of open data. This approach involves a structured policy framework in alignment with EU regulations on open data, particularly in education.

Another example is that of Estonia, which is notable for its inclusive and collaborative approach to formulating and implementing open data policies but has more work to do at the school level. The country involves various stakeholders in developing its open data strategy, including government bodies, private-sector participants and civil society. England is also recognised for its open data practices, owing to its comprehensive approach to data availability and accessibility. It has implemented policies establishing the "open by default" approach, where educational data such as school performance metrics, exam results and funding details are made publicly accessible through platforms such

as GIAS and NPD. The GIAS platform provides extensive data on school locations, types and contact details, while the School Performance Tables offer detailed performance data, including exam results and progress measures.

In addition, some countries have undertaken measures to strengthen their policies. Bulgaria, for example, ensures consistency and standardisation through clear regulations mandating the publication of educational data. In Poland, the Chancellery of the Prime Minister collaborates with various ministries to identify high-value datasets and plans "opening data schedules" and API development, thus moving towards more structured and timely dissemination.

However, some countries still lack comprehensive policy frameworks or face difficulties in consistently publishing school-level data. In others, data are limited to broad indicators without mandatory legal requirements to deepen or frequently update the information. Similarly, local or canton-level responsibilities, as seen in Bosnia and Herzegovina, complicate efforts to establish uniform data policies, making national-level policy alignment challenging.

4.2. Data quality and standards compliance

Ensuring data quality and standardisation is critical for the effectiveness of open school data. Countries like Finland, with its Vipunen education statistics portal, prioritise data accuracy and consistency. The portal provides detailed, high-quality data on various educational metrics, which are regularly updated and accessible in multiple formats.

Many countries, including the Czech Republic and Ireland, have taken steps to enhance quality through periodic reviews, metadata standards and machine-readable formats. Estonia's adherence to the Public Information Act and Green Papers on machine-readable data encourages continuous improvement.

Yet, several challenges remain. Fragmentation, where education data can be decentralised across regions, makes standardisation difficult. In some countries, data are available but lack systematisation at the school level. Issues with incomplete datasets, limited performance metrics or inconsistent updates appear in other countries. Addressing these gaps often requires clearer governance structures and capacity-building efforts to ensure that those collecting and managing data adhere to agreed-upon standards.

4.3. Technological infrastructure and data management

Adequate technological infrastructure is important for effectively managing and disseminating educational data. For example, the Netherlands has launched an open education API to facilitate access to educational data. This API facilitates programmatic access, enhancing data usability and fostering innovation. Similarly, England's NPD provides a comprehensive longitudinal dataset on pupils, supported by a well-developed information technology infrastructure. It also facilitates links with other relevant portals and ensures secure and

efficient data management. This is also the case in Finland, where such advanced infrastructure enables secure, granular and longitudinal data handling. Similarly, systems such as Luxembourg's education statistics portal Edustat and Slovenia's open data of Slovenia (OPSI) portal offer user-friendly interfaces, open formats and APIs, ensuring data consistency and accessibility.

As mentioned earlier, some countries struggle with outdated or insufficient technological resources. Even when new data initiatives are introduced, such as Albania's management information system for pre-university education (SMIP) platform, they offer only limited digital interaction. They are limited by manual data entry and a lack of interfaces with quality assessment agencies. Andorra's and Moldova's portals also meet usability and update-frequency challenges, and Azerbaijan's efforts remain mostly at the national level without granular school-level data. Ensuring that technological platforms are both reliable and user-friendly is critical, as seen in Denmark and Estonia, where dashboards and interactive tools enhance user engagement and data utility.

4.4. Technology evolution and other areas of innovations

Some states parties are adopting advanced technologies such as APIs and machine-readable formats to enhance data accessibility and reuse. The use of AI and chatbots represents another significant innovation. The Netherlands is a concrete example of such technologies implemented to facilitate the creation of new digital tools and platforms. These technologies provide personalised learning experiences, offer real-time feedback, and support administrative processes within educational institutions. Interviews with representatives from states parties (France, Iceland, Lithuania, Serbia and the United Kingdom) highlighted that there is a growing interest in adopting these technologies to foster a more data-driven and transparent educational environment.

Furthermore, there is a growing trend towards collaborative approaches and "open by default" policies – that is, the principle whereby a government makes its data publicly accessible by default unless there is a valid justification showing that disclosure could harm a greater public interest. Countries like Belgium and Cyprus emphasise the importance of open data by default and collaboration with the community to enhance transparency and accountability in education, highlighting also a trend towards more participatory data ecosystems. Some countries are beginning to integrate educational data with broader social, health, and economic datasets, providing a more holistic view of the factors influencing educational success. For example, Sweden combines educational data with broader social metrics to analyse educational outcomes comprehensively. Countries like France or Estonia plan to improve data usability and citizen data literacy in line with their digital agendas. Despite infrastructure or capacity constraints in some contexts, these technological and policy innovations suggest a global shift towards more integrated, user-oriented, and forward-looking open school data practices.

4.5. Stakeholder engagement and community involvement

Engaging with various stakeholders is essential for open school data initiatives. In Ireland, establishing a network of open data liaison officers across public service organisations has contributed to promoting the publication and use of open data, ensuring that the data meet the needs of the various users. These officers play a key role in fostering a culture of transparency and collaboration within the education sector. Germany's DatenmachenSchule initiative integrates open data into school curricula to promote student data literacy. It has been providing resources and tools for teachers to incorporate open data into lessons, which contributes to the development of students' critical thinking skills and understanding of the importance of data and helps them become data-literate citizens. Other examples include Belgium's approach, which emphasises "open by default" practices and collaboration with the community, and Estonia's inclusive strategy development, involving government bodies, the private sector and civil society to shape policies.

However, limited stakeholder involvement in other contexts hampers effective implementation. For instance, NGO-led school data initiatives lack governmental backing, potentially reducing consistency, visibility and long-term impact (see the case of Serbia in Box 5 below).

Similarly, limited capacity and awareness among public officials can constrain the uptake and effective use of available data. Engaging a broader range of users - parents, educators, local authorities and civil society - helps to build trust, improve data literacy, and ensure that data meet real-world needs.



Box 5 – Case study: Serbia's open school data initiative

The ongoing conflict between Ukraine and Russia has resulted in the migration of an estimated 50 000 Ukrainian and Russian families to Serbia, many with schoolage children. Faced with limited information about the Serbian educational system, two migrants co-founded Schools of Serbia to provide reliable, comprehensive educational information to these families. Initially intended as a for-profit project, the initiative has shifted to a non-profit, volunteer-driven effort to support migrant families in navigating the Serbian school system.

The primary goal of Schools of Serbia is to help migrant families access reliable and detailed information about schools and the broader Serbian education system, focusing on making this information easily understandable and accessible. The platform uses official data from the Serbian Ministry of Education and supplements it with interviews with Serbian officials, reports and insights from Al-assisted data cleaning. Despite challenges with the quality of official data, AI tools were instrumental in processing the available information. The initiative is entirely self-funded and operated by two core team members – one focusing on data analysis and the website, the other on qualitative research and consultancy.

The platform offers several benefits, particularly for migrant families, by providing them with a reliable resource to better understand and select suitable schools. The tool also supports private schools by helping them become more visible to families. Although the website has received positive feedback, the initiative has faced challenges due to limited data quality and slow responses from underfunded Serbian educational institutes.

The challenges include poor data quality, slow collaboration with Serbian officials and the politically sensitive nature of the migrant situation due to the ongoing war. The founders also faced difficulties forming connections with the federal government and have only established links with local administrations.

The initiative plans to improve its map-based system, potentially incorporating school inspection reports and expanding its content. The two partners are also considering offering services such as data analysis to the Serbian Ministry of Education to enhance the overall understanding of the educational landscape.

Source: Interview with the team of Schools of Serbia initiative, 26 July 2024.

4.6. Impact monitoring and evaluation

Monitoring the impact of open school data initiatives and evaluating their outcomes are essential for continuous improvement. Ireland utilises a kay performance indicator (KPI) tool that allows public bodies to track dataset usage, quality and currency, enabling them to assess the effectiveness of their open data initiatives over time. This tool contributes to maintaining high standards and ensures the data remain relevant and useful for decision making. Estonia's open data framework emphasises continuous monitoring and improvement, thereby ensuring the data remain relevant and useful over time. In many countries, however, impact monitoring is mainly limited to monitoring the typology of users and data accessed and less on tracing the impact on policy making and performance management.

For example, some countries provide information but have no structured mechanism to assess whether data inform decision making or improve school performance. In other cases, offering user-friendly dashboards does not explicitly track how insights lead to policy changes. As initiatives mature, integrating evaluation frameworks could help countries identify what works, guiding future policy adjustments and investments.

Chapter 5

Common challenges and barriers to the implementation of open school data initiatives

hapter 5 highlights the main challenges in implementing open school data policies and shares best practices in designing and implementing effective open data policies across the European region.

5.1. Decentralised governance structures

Countries like Germany, Iceland, Italy and Spain face challenges with decentralised governance and the implementation of uniform open data strategies. Digital public service in Germany is delivered with responsibilities divided among its 16 federal states. This fragmentation poses challenges for standardising and simplifying open data practices, particularly in education.²⁷ Germany's limited progress was also attributed to a lack of a central co-ordinating body for open data and limited public awareness and usage of open datasets.²⁸ Bosnia and Herzegovina, Spain and Iceland's cases are yet other examples of how a territorial administrative organisation can impact standardised data gathering and dissemination harmonisation. In other contexts, data remain at national or aggregate levels with no specific school-level breakdown, further complicating efforts to harmonise and compare data across regions or administrative units.

5.2. Data quality and standardisation

In many countries, the quality of data released is affected by issues such as low quality, incomplete datasets, lack of standardisation and infrequent updates, thereby reducing its usability. Some countries struggle with inadequate data governance, insufficiently enforced policies and a lack of user-friendly data portals.

See www.dw.com/en/germany-and-digitalization-why-cant-europes-richest-country-getup-to-speed/a-58273979, accessed 30 July 2025.

^{28.} Ibid.

While broad information on educational institutions is available in Austria and the Czech Republic, limited school-level data and performance metrics constrain deeper analysis. Portugal and Croatia offer various datasets, but the need for targeted searching or the lack of consolidated, comparable indicators makes data less accessible for non-specialists. Similarly, Moldova's publicly available statistics lack financial or performance metrics, limiting their utility for evaluating resource allocation or school effectiveness. Ensuring that data are regularly updated, standardised, and machine-readable, as seen in Luxembourg or Finland, remains an ongoing challenge for many countries.

5.3. Outdated infrastructure and technology

Many countries need more technological infrastructure to support comprehensive open data initiatives. This includes the physical hardware and digital platforms necessary for data management and dissemination. The pandemic highlighted these limitations and, in several countries, led to higher investments in digitalisation plans (such as Germany). However, proper awareness and commitment to prioritising necessary resources for implementing open data initiatives also impact this.

Some countries have introduced new open data initiatives, providing a digital interface for schools and parents. However, they still rely on manual data entry and lack connections to quality assessment agencies, limiting its overall effectiveness. The absence of interactive dashboards or advanced interfaces restricts user engagement and data usability. Insufficient hardware, software or stable internet infrastructure can impede progress even when new digital tools emerge.

5.4. Limited capacities and awareness

A common issue across some countries is the limited capacity and awareness among public officials and educators about the benefits of open data practices and how to use them effectively. Though countries increasingly recognise the importance of evidence-based policy making and efficient service delivery, some, such as the Western Balkan countries, are still new to this process and more susceptible to political pressures that impact the periodicity and accessibility of granular data. In addition, a number of countries reported a lack of structured governance, open data policies and capacities, resulting in a slow development of comprehensive strategies, especially in education (European Commission 2022). Local governments often lack the resources and infrastructure to support data collection and sharing.

At the same time, in most countries, there is minimal training for educators and administrators on the importance of open data and how to utilise the practice effectively. In others, the absence of in-house skills to interpret and use data for planning hampers effective decision making. Without systematic training and awareness-raising efforts, educators, administrators and policy makers struggle to realise the full potential of open educational data.

5.5. Resistance to change

Resistance to change remains significant. In some countries, schools or educators wary of increased transparency may view open data as a threat rather than an opportunity. For example, some examples shared how NGO-led school data projects lack governmental endorsement, potentially limiting trust and incentives for educators to engage with the data.

In addition, there is also underlined resistance to change from stakeholders, including schools and educators, who are concerned about increased scrutiny and accountability, as well as when data-gathering processes change. Addressing these concerns by demonstrating the benefits of open data and providing supportive guidance can increase buy-in and foster a culture of evidence-based decision making.

5.6. Data privacy

Finally, the release of detailed educational data also raises concerns about data privacy (Atenas and Havemann 2015), a topic of public discussion across several countries that creates some controversy.

Countries like the United Kingdom carefully regulate access to pupil-level data in the NPD, requiring secure handling protocols and ethical approval. To prevent stigmatisation, caution must be taken when disclosing sensitive indicators, such as those related to specific student groups or teacher qualifications. Without clear privacy safeguards and transparent guidelines on what can or cannot be published, users may distrust the data. Reports from several contexts highlight that building trust through anonymisation, secure access procedures and user education is crucial to encouraging data reuse and preventing misuse. Measures need to be in place to protect sensitive information and ensure that data are anonymised where necessary.

Chapter 6

Main findings and key takeaways

his last chapter summarises the key findings of the study and its main takeaways. It also identifies areas requiring further investigation and formulates forward-looking recommendations for future follow-up.

6.1. Summary of findings

Implementing open school data initiatives across States Parties to the European Cultural Convention represented at the Steering Committee for Education (CDEDU) of the Council of Europe reveals opportunities and challenges. A consistent trend is the increasing use of open school data to strengthen transparency, accountability and public trust in education systems. Countries increasingly recognise the value of accessible, reliable educational management and decision-making data. This has led to the development of various platforms and frameworks aimed at disseminating school-level data to stakeholders, including parents, educators and policy makers.

Some countries, including Finland, Estonia and Ireland, have emerged as leaders in open school data implementation. They leverage advanced technologies like APIs to facilitate data sharing and enhanced transparency. These initiatives are often influenced by regulatory frameworks, such as the EU Open Data Directive, which sets standards for data availability, accessibility and reusability.

The level of implementation of open school data initiatives varies widely across countries. In countries still in the early stages of developing comprehensive open data systems, common barriers include decentralised governance structures, limited technological infrastructure and a lack of standardised data collection processes. Another area for improvement is the reluctance of some institutions and stakeholders to adapt to open data policies, often due to concerns about privacy and accountability.

Many states parties still face challenges in ensuring data quality and standardisation. Several countries need to provide comprehensive financial data or detailed performance metrics at the school level. This gap limits the ability to assess resource allocation efficiency and the effectiveness of educational interventions in detail without significantly impacting financial and pedagogical

accountability. The lack of open school data on financial and performance data makes it challenging to hold educational authorities accountable for allocating and managing resources or evaluating the direct impact of academic approaches on student outcomes.

Many countries focus on administrative data, such as enrolment figures, financial data, school infrastructure and teacher statistics, with less emphasis on educational outcomes and quality indicators. This narrowed focus restricts the potential of open school data to enhance accountability in education and improve outcomes. Some of the information might be available on other websites, such as in Iceland, where the financial information is only available on the municipalities' websites.

Interviews suggest that providing access to more detailed school performance data could have implications for equity. Greater transparency in education could reveal inequalities in quality and resource distribution. It could also have negative consequences, such as stigmatising lower-performing schools or influencing parental choices in ways that reinforce existing disparities (Davies et al. 2019). Thus, the debate over the provision of school performance data involves weighing the potential benefits against the risks.

The survey data gathered from states parties highlights the importance of building robust data governance systems that ensure data accuracy, comprehensiveness and accessibility. Some countries also emphasise the need to include additional data points, such as student well-being, to provide a more holistic picture of school performance.

6.2. Main takeaways

- ▶ Importance of regulatory frameworks. Open school data initiatives are more successful in countries with robust regulatory frameworks where national policies mandate the publication of educational data. These frameworks ensure data are collected and disseminated consistently and reliably, enabling stakeholders to monitor educational outcomes and resource allocation effectively. Where such frameworks are lacking, compliance and consistency in data publication remain challenging. Developing a guidance document on open school data could help to harmonise understanding and implementation practices across countries.
- ▶ Need to improve data quality and standardisation. Data quality and standardisation remain persistent challenges across most states parties. Many countries struggle with incomplete datasets, inconsistent data formats and infrequent updates. This not only reduces the usability of the data but also undermines efforts to promote transparency and accountability. Limited school-level financial and performance data also restricts the capacity to evaluate resource allocation efficiency and educational impact.

- ▶ Technological infrastructure and innovation. Advanced technological infrastructure plays a critical role in the success of open school data. Countries that have adopted technologies such as APIs and machine-readable formats are better positioned to offer accessible and interactive data platforms. Such innovations make it easier for stakeholders to analyse and use data for decision making. In countries with outdated infrastructure, the potential for open school data are often hindered by limited data-sharing capabilities and slow digitalisation.
- Stakeholder engagement and capacity building. The success of open school data initiatives often hinges on the active engagement of stakeholders. Countries like Ireland have successfully implemented open data liaison officers' networks to ensure data meet user needs. However, a recurring issue is the limited capacity of local governments and educational institutions to use open data effectively. Capacity-building initiatives, such as those implemented in Germany and Italy, can help address these gaps by training public officials and educators to interpret and use educational data.
- ▶ Addressing privacy and equity concerns. Open school data can raise concerns about privacy and equity. In many countries, including Finland and Ireland, there is an ongoing debate about the risks of disclosing sensitive information, such as student performance data, which could stigmatise lower-performing schools. To address these concerns, some countries have implemented strict data anonymisation protocols and introduced measures to limit data publication that could be used to compare schools unfairly.
- Innovations and future prospects. Several countries are exploring innovative ways to enhance their open school data systems. For example, Ireland has developed tools to monitor the impact of open data initiatives, allowing public bodies to track dataset usage and assess its relevance for decision making. Similarly, Estonia and Finland are improving their national data portals to provide more user-friendly platforms. There is also a growing interest in integrating educational data with broader social, health and economic datasets to offer a more comprehensive view of the factors influencing educational success.

6.3. Areas requiring further investigation

Some areas require further investigation. For instance, there is a need for further investigation into how different educational data platforms can be integrated to provide more comprehensive insights. Estonia and Finland are enhancing their national data portals to make data publication easier and more user-friendly, which could serve as models for other countries.

- There is a need to continue investment in data literacy and capacity building. Countries like France, Germany and Italy are promoting data literacy through initiatives that train educators and public officials on data use and interpretation to make more effective data-driven educational decisions.
- ▶ Many countries lack systematic approaches to monitor the reuse and impact of open school data. Developing standardised impact measurement frameworks could help improve understanding about how data are used and their effects on policy making and educational outcomes. More research is also needed to explore effective ways to engage with key stakeholders (educators, parents and civil society) using open school data. Countries like Ireland and France have established networks and tools to promote open data use, but such initiatives are not widespread across all states parties.

Overall, the available literature lacks substantive information on education stakeholders' perceptions of open school data initiatives and their impact on education systems.

6.4. Forward-looking recommendations

- ▶ Developing basic principles and a clear guidance document on the development of open school data initiatives could help states parties align their open data efforts and streamline the operationalisation of their initiatives at various implementation stages.
- ▶ Countries need to invest in improving the quality and comprehensiveness of their educational data. This includes addressing gaps in financial data and performance metrics at the school level, but also considering other data such as student well-being to provide a more holistic view of educational outcomes.
- ▶ **Public consultations and training programmes** can help expand stakeholder engagement including educators, parents and communities, and build an open school data literacy and culture across Europe. Sharing training materials and encouraging peer learning could be usefully considered in this context.
- ▶ Integrating open school data concepts into school curricula could help raise students' awareness of the importance of transparency and accountability in education. This can be done by assigning school projects, encouraging student-led initiatives and fostering co-operation with communities.
- ▶ It is essential to find a balance between promoting transparency and protecting sensitive data. In this connection, countries need to adopt privacy policies where these are missing, carefully assess the data type for publication and formulate mitigation measures as needed.

- ► The future of open school data lies in harnessing emerging technologies such as AI, APIs, data analytics and visualisation systems to provide more insightful, real-time and accessible data that can inform educational policies and practices.
- ▶ There is a need for a stronger emphasis on adequate methodologies for capturing user perception and feedback and tracking progress and impact, thus ensuring that open school data initiatives contribute meaningfully to educational reform.
- ▶ Sustained efforts to promote cross-country knowledge sharing, peer learning and exchanges between states parties would allow them to learn from each other's practices and experiences and continuously refine their approaches accordingly. This would also provide a useful space for exchanging information on existing challenges and possible mitigation measures to address them.
- ▶ Finally an open school data maturity index could be usefully developed for European countries, as a way to track the progress made, encourage innovations and foster dialogue among states parties.

References

Atenas J. and Havemann L. (2015), "Open data as open educational resources: case studies of emerging practice", Open Knowledge, Open Education Working Group, London, available at http://dx.doi.org/10.6084/m9.figshare.1590031, accessed 3 August 2025.

Council of Europe (2023), Council of Europe Education Strategy 2024-2030 "Learners First", Council of Europe, Strasbourg, available at https://rm.coe.int/education-strategy-2024-2030-26th-session-council-of-europe-standing-c/1680abee81, accessed 3 August 2025.

Davies T. et al. (eds) (2019), *The state of open data: histories and horizons*, African Minds and International Development Research Centre, Cape Town and Ottawa, available at www.africanminds.co.za/state-of-open-data/, accessed 3 August 2025.

European Commission (2018a), *The economic impact of open data: opportunities for value creation in Europe*, available at https://op.europa.eu/en/publication-detail/-/publication/1021d8a7-5782-11ea-8b81-01aa75ed71a1/language-en, accessed 3 August 2025.

European Commission (2018b), "European ideas for better learning: the governance of school education systems", produced by the ET 2020 Working Group Schools, available at https://edudoc.ch/record/131215?ln=en, accessed 3 August 2025.

European Commission (2020), *Open data maturity report 2020*, available at https://op.europa.eu/en/publication-detail/-/publication/6522df72-5ad5-11eb-b59f-01aa75ed71a1/language-en, accessed 3 August 2025.

European Commission (2022), *Open data maturity report 2022*, available at https://op.europa.eu/en/publication-detail/-/publication/e9a34336-9d87-11ed-b508-01aa75ed71a1/language-en, accessed 3 August 2025.

European Commission (2024), *Education and Training Monitor 2024*, available at https://op.europa.eu/webpub/eac/education-and-training-monitor-2024/en/, accessed 3 August 2025.

European Union (2019), Directive (EU) 2019/1024 on open data and the re-use of public sector information, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019L1024, accessed 3 August 2025.

Gumene I. (2017), "Social accountability for the education reform in Moldova, Evaluation for 2017", Expert-Grup.

IIEP-UNESCO (UNESCO International Institute for Educational Planning) (2024), "Education Sector Analysis – Republic of Albania", IIEP-UNESCO, Paris, available at https://unesdoc.unesco.org/ark:/48223/pf0000390365/PDF/390365eng.pdf. multi, accessed 3 August 2025.

OECD (2021), The economic and social impact of open government: policy recommendations for the Arab Countries, OECD Publishing, Paris, available at https://doi.org/10.1787/6b3e2469-en, accessed 3 August 2025.

Poisson M. (2021a), *Open school data: what planners need to know, ethics and corruption in education*, UNESCO International Institute for Educational Planning, Paris, available at https://unesdoc.unesco.org/ark:/48223/pf0000376705, accessed 3 August 2025.

Poisson M. (2021b), *Developing open school data policies: basic principles*, UNESCO International Institute for Educational Planning, Paris, available at https://unesdoc.unesco.org/ark:/48223/pf0000378493?posInSet=1&queryId=7601 ee48-ac5a-4342-a15e-31ecf1165802, accessed 3 August 2025.

UNESCO (2018), Understanding the educational management information system (EMIS): a guide for developing countries, UNESCO, Paris.

UNESCO (2021), *Open data and education: a global perspective on pedagogical accountability*, UNESCO Publishing, Paris.

Veja C., Hocker J., Schindler Ch. and Rittberger M. (2021), *Educational open government data in Germany: the landscape, status, and quality*, available at epub. uni-regensburg.de, accessed 30 July 2025.

Appendix 1

Description of open school data initiatives implemented in 19 states parties

Open school data initiatives France, Germany

	Observation		
of data	Comparisons of data available Downloadable spreadsheets		
Presentation of data	spreadsheets Map/ dashboard	•	•
Prese	Search engine/ filters	•	•
	Type of data	Official name	 Localisation Name of school Sponsor Legal status School type
	Organisation in charge	Ministry of Education, Government of France	Open Knowledge Foundation Deutschland
	Project origin	Government/ national	Civil society/ national
	Source/Title	Open platform of data: education, sports and youth	Datenschule
	Country	France	Germany

Open school data initiatives Iceland, Ireland

	Observation	Once you click on a school in the map, a new tab opens with school data (number of students, calendar, food, etc.). Available information is for the city of Reykjavik only.	Data are updated annually.
ata	Comparisons of data available		
on of c	Downloadable spreadsheets		
Presentation of data	Map/ dashboard	•	
Pres	Search engine/ filters		•
	Type of data	Name of the principal, assistants and head department Plan for supporting students with disabilities Parents association board Curriculum	 Website Email Phone number Location on map Principal's name Enrolment (total and by gender) List of inspection reports Free education indicator / fee charging indicator
	Туре	Geo-localisation Address Contact - telephone number School calendar Opening date Number of students enrolled	County Sector/level (post primary, primary, special education) Religion (Catholic, Church of Ireland, Jewish, Muslim, Methodist, etc.) Gender Language of instruction Address
	Organisation in charge	Government of Reykjavík	Department of Education/ Government of Ireland
			Government/ national
Source/Title Primary schools on a Map / Reykjavik		Primary schools Government/ on a Map / local Reykjavik	lrish Government- Schools directory
Country		Iceland	Ireland

Open school data initiatives Italy, Kazakhstan

	Observation	There is a map displaying information about number of schools and students by region in this link.	Digital education documentation accessible through the Egov Mobile app. Various mobile apps provide education data on kindergarten ranking, school information and sector-wide data, including plSA results, and general education statistics.
ata	Comparisons of data available		•
on of d	Downloadable spreadsheets	•	
Presentation of data	Map/ dashboard		
Pres	Search engine/ filters		•
	Type of data	Geographic area School name Sedion School address Province Municipal school code Reference institution School email institution School website	School enrolment School email Administrative Services for online registration at all directors, and contact details; location examination results and academic performance metrics Verification of educational ecrtificates and diplomas to streamline the validation process.
	Organisation in charge	Ministry of Education and Merit	Ministry of Education, together with the Ministry of Digital Development, Innovations and Aerospace Industry
	Project origin	Government/ national	Government/ national
	Source/Title	Portale unico dei dati della scuola	Open data E-government portal
	Country	Italy	Kazakhstan

Open school data initiatives Liechtenstein, Lithuania

	Observation	Each school shows different information. Schools are listed by level of education, and a link is provided to access school data.	Comparison of each school with other schools is provided and a ranking established.
of data	Comparisons of data available Downloadable spreadsheets		•
Presentation of data	spreadsheets Map/ dashboard		•
Prese	Search engine/ filters		•
	Type of data	The available information is not the same in each school. However, it is possible to find data on: School map (geo-localisation) (current events, activities and annual highlights) Teachers highlights) List of materials Contact School may Infrastructure Relevant documents	 Municipality School Level of education Language of instruction Number of students Average number of teachers students in a class Number of students Average number of eachers Mumber of teachers Average number of poistance student-institution Number of students
	Organisation in charge	National Administration/ Principality of Liechtenstein	State Data Agency
	Project origin	Government/ national	Government/ national
	Source/Title	Schools/ National Administration/ Principality of Liechtenstein	Schools dashboards platform
	Country	Liechtenstein	Lithuania

Open school data initiatives Monaco, Netherlands, Norway

	Observation			
Presentation of data	Comparisons of data available Downloadable spreadsheets			
entatio	Map/ dashboard			
Pres	Search engine/ filters	•	•	•
	Type of data			school ownerSchool categoriesSchool levelNumber of students
	Тур	Address Telephone Iypes of establishments School Map	Primary education headquarters Locations School boards Staff Students	Organisation number Location address Postal address Potal address e-mail Number of str
	Organisation in charge	Monservice Public/ Principality of Monaco	Education Service/ Ministry of Education, Culture and Science	Norwegian Directorate for Education and Training
	Project origin	Government/ national	Government/ national	Government/ national
	Source/Title	Monservice public/ List of primary and secondary schools, with interactive map	DUO open education data/ Public data and publications on government- funded education in the Netherlands	National school Government/ register (NSR) national
	Country	Мопасо	Netherlands	Norway

Open school data initiatives Poland, Romania

Presentation of data	Comparisons of data available Downloadable spreadsheets Map/dashboard	Some school data are not available (such as the total number of students).	Latest data are from 2020–2021. The website provides downloadable spreadsheets. School-level information is available under: "Network of higher education institutions" and "The school network of pre-university education units in the 2020–2021 school vear"
Prese	Gasnboard Search engine/ filters	•	
	Type of data	 Region Facility type E-mail Managing body Creation date Number of students Address 	City Urban or rural Name Long unit name Fiscal code Address Postal code professional) Phone Fax Website Associated levels (preschool, primary, high school, primary, high school, primary, high school, professional)
	Organisation in charge	Ministry of Education and Science	Ministry of Education/ Romania
	Project origin	Government/ national	Government/ national
	Source/Title	Register of schools and educational institutions (RSPO)	Open public data portal
	Country	Poland	Romania

Open school data initiatives Serbia, Slovak Republic, Spain

Open school data initiatives Sweden

Presentation of data	Comparisons of data available Downloadable spreadsheets	•	This information is specific to the city of Stockholm. The website includes pictures and allows to save favorites. Once schools are selected as "favorites," they are shown in comparison.
sentatio	Map/ dashboard Search engine/ filters		
Pres	Search engine/ filters	•	•
	Type of data	Educational level on misconduct Geographical level on misconduct (national, county, municipal, school) Pupils responsible authority) National tests (expenditure) Staff Relationship between test and grade	Type of school Area Form of organisation Grade Address Form of organisation (municipal or detached) Number of students
	Organisation in charge	Skolverket/ Swedish National Agency for Education	City of Stockholm
			Government/ local
	Skolverket/ Statistics search national tool		Preschool and school portal
Sweden		Sweden	Sweden

Open school data initiatives Ukraine, United Kingdom

	Observation	Only information about general secondary schools is available.	Information is available only about England.
Presentation of data	Comparisons of data available Downloadable spreadsheets	•	
entation	Map/ dashboard		
Prese	Search engine/ filters	•	•
	Type of data	 Phone E-mail Website Head Support Context (rural-mountain-boarding school) 	Gender of entry Nursery provision Ols, Ofsted rating Headteacher/ Principal ed, Website Telephone School capacity Number of pupils r Number and percentage of pupils eligible for free school meals
	ţ	Full name Short name Status Type of institution Ownership Region Settlement Location	Establishment type (academies, independent schools, Welsh schools, etc.) Address Status (open, closed, proposed to open) Phase of education Local authority Religious character Close date Age range
	Organisation in charge	Ministry of Education and Science	Department for Education (DFE)
	Project origin	Government/ national	Government/ national
	Source/Title	Register of subjects of educational activity/Unified State Electronic Database on Education (EDEBO)	Get information about schools (GIAS)
	Country	Ukraine	United Kingdom

Appendix 2

Summary of open education data and open school data initiatives implemented in states parties

Albania: The Institute of Statistics (INSTAT) provides broad data on Albania's education system through its "labour market and education" section. This platform offers a range of statistical insights into educational metrics based on administrative data and surveys conducted by INSTAT. However, the available data lack the detailed granularity needed for specific regional or sectoral analyses. The Albanian Ministry of Education and Sports also publishes summary data and reports on the education system, including strategic plans and policy documents. However, these reports are not regularly published online, and their periodicity varies. School-level data are not available online to the general public. However, the management information system for preuniversity education (SMIP) was introduced in the 2022/23 academic year, enhancing digital interaction among schools, students and parents. SMIP is a digital teaching platform that allows academic teams to share information with students and enables parents to track children's attendance and performance. Each school, both public and private, has two SMIP user accounts. The system is accessible via smip.al and provides real-time updates on students' daily progress and school attendance. Students can access subject information, class materials and multimedia resources uploaded by teachers. Although data access levels vary, SMIP interfaces with other systems managed by the General Directory of Pre-University Education and its regional and local units. Data entry is still done manually, and there is no interface with key quality assessment agencies. There is also a noted lack of in-house capacity to effectively interpret and use the data for planning (IIEP-UNESCO 2024). Other management information systems include the Matura database, which manages pre-university data and state exams.

Andorra: The Andorran Government's education portal *Educació, formació, investigació i divulgació del coneixement* provides access to various educational resources and relevant data. It offers institutional details, data on school enrolment and student demographics. Data granularity, update frequency and usability challenges are some issues that impact the platform's effectiveness.

Armenia: The Statistical Committee of the Republic of Armenia (ARMSTAT) provides statistical data on various sectors, including education. These data include national data on education, particularly reported under SDG 4. There is no specific school information available.

Austria: Education data are available through national portals such as **Statistics** Austria and open data Austria (with sections on education, culture and sport), and the website of the Ministry of Education. Those portals provide institutional information such as the number and types of educational institutions, enrolment data at various educational levels (primary, secondary, tertiary), and teacher statistics (mainly available at **Statistics Austria**).

Another portal providing general information about schools is www.schulen-online.at. General data on the Austrian school system are available in the website of the Ministry of Education, including information on primary, secondary and tertiary education levels, details about the curriculum and educational standards. Each portal has limited financial data and performance metrics information at the school level and requires targeted searching. Insights into recent policy developments and their impact and analysis of student performance, educational attainment and system efficiency are captured through periodic reports such as the European Commission's Education and training monitor 2024. Moreover, a Task Force on Public Sector Information and open data has been set up within the Federal Ministry for Digital and Economic Affairs with regard to implementing the EU Open Data Directive and determining high-value datasets, as well as for promoting an open data policy (European Commission 2022).

Azerbaijan: The open data portal of Azerbaijan is the central repository for various public datasets, including those related to the education sector. The portal provides open access to a range of government and institutional data. It provides national-level statistics on the number of students enrolled at different educational levels (primary, secondary and higher education). This data helps in understanding student demographics and educational reach in primary and secondary schools and universities, including their locations and capacities. The portal includes data on the number of teachers, their distribution across regions and their qualifications. Datasets are available in multiple formats, including comma-separated values (CSV), Excel and PDF. It includes visualisation of data trends, such as charts and graphs.

Belgium: The open data portal of ARES (Académie de Recherche et d'Enseignement Supérieur) provides access to a wide range of educational data in the Wallonia-Brussels Federation. The "Projet de note stratégique pour une stratégie fédérale open data" emphasises key concepts such as "open by default", implications of open data and collaboration with the community (European Commission 2022). It offers user-friendly access to information on academic programmes, student enrolment, graduation rates and funding. Data.gov.be is another central portal for open government data, providing data on demographics, infrastructure, funding and school performance. Data on student performance, school facilities and teacher qualifications are also available. The Flemish Government API Portal provides access to a wide range of datasets relating to education in the Flemish region. This portal offers real-time access to data, including information on funding, school performance and other educational indicators.

Bosnia and Herzegovina: The Agency for Statistics of Bosnia and Herzegovina (BHAS) is the main portal for education data, providing national statistics on student enrolment across different educational levels, including primary,

secondary and tertiary education. It compiles sources from lower levels of government. The portal provides information on educational institutions, including the number of schools, their locations, capacities and the number of teachers and their qualifications. The data can be accessed in multiple formats, such as PDF and Excel, enabling users to download and analyse them offline. However, the portal primarily provides static reports with limited interactive features. Users need technical skills to access, interpret and analyse the datasets effectively. Additional data and updates on educational policies and developments can be accessed through the Federal Ministry of Education and Science. Since the exclusive mandate for education is at the canton level in the country, additional, more granular data are also available at this level. However, central-level data aggregation is more challenging.

Bulgaria: Bulgaria has established clear policies and regulations that mandate open data collection, publication and use. These frameworks ensure consistency and standardisation across the education sector. The Bulgarian open data portal is the national portal that provides access to a wide range of general educational data. This portal includes data on demographics, infrastructure, funding, teacher qualifications and school performance by education level, including comprehensive educational data that facilitate public access to information on school performance. In addition, the Republic of Bulgaria's National Statistical Institute (NSI) provides general data on education, offering insights into student enrolment, graduation rates and educational attainment levels. The *Open data maturity report 2022* (European Commission 2022) assesses that contrary to previous years, Bulgaria now shares metadata in clear, plain language (p. 61).

Croatia: The Croatian open data portal hosts datasets from various sectors, including education. It enhances transparency and supports data-driven decision making by providing open access to government data. The datasets include information by education level (primary and upper secondary schools) supporting thorough analyses of the education system's status. Users can search for specific datasets and filter results based on various criteria. Data are available in multiple formats, including CSV, XLSX and PDF, to facilitate ease of use and analysis. There is limited available and systematised information at the school level.

Cyprus: The Cyprus Statistical Service (CYSTAT), the national statistical office under the Ministry of Finance, provides various statistical data covering education. Information includes general school data – number and types of educational institutions, including public and private schools as well as higher education institutions; enrolment statistics by education levels and demographics; teacher and staff data – qualifications and distribution across schools; financial data – government and private expenditures on education, including budget allocations and spending patterns; as well as graduation and dropout rates. There is limited available and systematised information at the school level. The data are presented in user-friendly formats, such as tables and charts. However, the website does not directly offer student performance metrics or individual school performance metrics. Comparative analysis is available mainly through reports such as the European Commission's Education and training monitor). The 2021 Cyprus open data impact study found that 89% of respondents believed that

open data greatly enhanced or positively impacted public sector transparency (see European Commission 2022, p. 42).

Czech Republic: The Czech Statistical Office (CZSO) provides data covering various educational levels. The CZSO tracks institutional information – providing data on the number and types of educational institutions, including public and private schools, and their regional distribution; the number of students enrolled at different educational stages, including the distribution across regions, which helps in understanding demographic and geographic trends; teacher statistics – number of teachers, their qualifications and distribution; and graduation rates – statistics on completion rates and educational attainment levels, providing insights into student outcomes and system performance. There is limited available and systematised school-level information. Data are presented in a variety of formats, including tables, charts and interactive visualisations. The Czech Republic demonstrates a good maturity across all dimensions with strategies to enhance data quality and standards compliance, yet with limited impact monitoring. Nonetheless, efforts are required to continue to help boost data reuse.

Denmark: The Statistics Denmark website provides extensive educational data. Statistics Denmark, an independent government institution, manages the website. The data provided include information by different types of educational institutions (for example public vs. private schools, vocational vs. academic institutions) and their geographical distribution; general metrics about enrolment figures by education level, region, gender and age; teacher statistics – number of teachers, their qualifications and distribution; and data on educational outcomes – graduation rates, average student performance, and post-graduation employment. However, the information available is not disaggregated by school. The data are presented through user-friendly interactive dashboards and visualisations. Users can filter data using various parameters and view trends over time.

Moreover, the availability of raw data for download facilitates in-depth analysis and integration with other datasets. Holistic data coverage provided by Statistics Denmark supports a broad range of analyses and policy evaluations and a robust foundation for evidence-based decision making. In Denmark, the Open Data Directive²⁹ mandates that dynamic data be accessible via API and, if applicable, mass download. The 2022 national digitisation strategy³⁰ includes actions to improve access to real-time traffic data. Meanwhile, the Agency for Digital Government maintains a list of public bodies allowed to charge beyond marginal costs for data (European Commission 2022).

Estonia: Statistics Estonia provides extensive data on various aspects of the Estonian education system, from early childhood to tertiary education. The national statistics agency manages the website. Information includes general enrolment statistics by education level and demographics, teacher statistics,

^{29.} Available at https://en.digst.dk/digital-governance/data/open-data-and-re-use-of-public-sector-information/, accessed 30 July 2025.

^{30.} Available at https://en.digst.dk/strategy/ the-national-strategy-for-digitalisation/, accessed 30 July 2025.

expenditure data, and graduation and dropout rates. Some general information is also provided on students' performance and achievement levels but without detailed performance metrics at individual school level or standardised test scores. The range of data provided covers all critical aspects of the education system, from institutional characteristics to enrolment and outcomes. The data are presented through interactive dashboards and visualisations, allowing users to explore and analyse the information dynamically. Raw data are available for download, facilitating detailed analysis and integration with other datasets. Data publishing is governed by the Public Information Act (PIA),³¹ which includes rules on open data publishing, the reuse of open data, and high-value datasets. Additionally, a Green Paper on machine-readable open government data provides further guidelines for publishing open data. As part of its Digital Agenda 2030,³² Estonia plans to educate its citizens on data publishing and is also committed to enhancing the usability of its national data portal, namely Statistics Estonia (European Commission 2022).

Finland: A government resolution³³ on opening and using public data was drafted in 2021 and published in 2022. The Ministry of Finance's "Opening up and using public data"³⁴ initiative promotes the broader and more effective use of public data across society by developing strategic documents and recommendations (European Commission 2022). The Ministry of Education and Culture (MEC) website provides robust datasets and resources for Finland's open education data landscape, encompassing policy frameworks, institutional data and strategic initiatives. However, the MEC website is a central hub for accessing educational data, policy documents and research reports but does not provide direct, detailed school data. More data are supplied through Statistics Finland, the Finnish National Agency for Education (EDUFI) and Education Statistics Finland.

Statistics Finland is the national statistical institute which provides comprehensive online information and datasets concerning education and research in Finland. Types of data available include education statistics – enrolment, graduation, attainment and student demographics; institutional data – information about schools by education level; and research data – activities, funding and outputs, including data on research institutions and research personnel. This website also provides data on public and private spending on education, including breakdown of expenditure by different categories. The Finnish National Agency for Education Services provides information on the international mobility of students and staff in general education, vocational education and training (VET) and higher education. Education Statistics Finland includes information on school demographics, academic performance and education outcomes, institutional

^{31.} Available at www.riigiteataja.ee/en/eli/ee/510122021005/consolide/current, accessed 30 July 2025

^{32.} Available at https://mkm.ee/en/e-state-and-connectivity/digital-agenda-2030, accessed 30 July 2025.

^{33.} Available at https://lvm.fi/en/-/government-resolution-increases-data-utilisation, accessed 30 July 2025.

^{34.} Available at https://vm.fi/en/opening-up-and-using-public-data, accessed 30 July 2025.

information, and financial data. Statistics are used to enhance the usability and content of the national open data portal, opendata.fi, by continuously updating support materials based on user feedback and usage statistics, prioritising the development of the most visited pages, improving search functionality and ensuring all pages function correctly (European Commission 2022).

France: France's open school data initiatives focus on providing comprehensive data on school performance and financial transparency. The Ministry of National Education has developed platforms that offer access to detailed school profiles and performance metrics, the main platform being the open platform of data, education, sports and youth. This platform includes a broad spectrum of school data, such as school-level data, student enrolment figures, educational resources and school performance metrics. This extensive coverage allows users to explore detailed information about different facets of the educational system. The platform is designed with user accessibility in mind, offering tools for searching, filtering and visualising data. Users can easily navigate through datasets to find relevant information and download it for further analysis. Data are regularly updated to reflect current conditions and trends. The platform also provides interconnected datasets that allow users to cross-reference information across different categories, enhancing the depth of analysis possible. While there are challenges related to data integration, quality and interpretation, the continuous evolution and improvement of the platform have been essential in addressing challenges and maximising its impact on the French educational system. The Interministerial Digital Directorate (DINUM) co-ordinates national policy on data, algorithms and source code, supported by committees led by the Etalab department. The national portal, data.gouv.fr, tracks data reuse and promotes engagement through community activities, newsletters and events like hackathons (European Commission 2022).

Georgia: The National Statistics Office of Georgia – Education is the central authority responsible for statistical data in Georgia. The website includes information on student demographics – age, gender and municipality; enrolment rates – at various educational levels; data on school resources and infrastructure – number of schools, class sizes, teacher qualifications and availability of educational resources; and graduation. It does not include more granular school-specific performance metrics such as standardised test scores or detailed financial information about individual schools or school budgets. The statistics are updated annually, with the latest available data typically covering the most recent complete academic year. Data are available at national and regional levels, as well as historical data. Data can be downloaded in various formats, such as Excel (XLS) and PDF.

The DataLab is another Georgian initiative that collaborates with various governmental and non-governmental organisations to provide datasets. However, data remain at the national level and are not regularly updated, with the latest datasets published in 2021. Existing datasets are available to the public and can be accessed and downloaded. The DataLab does not provide financial data on funding allocations or individual school expenditures. Also, the portal does not provide data on individual school assessments but mainly information on student national exam results at the national level.

Germany: The Federal Ministry of Education and Research (BMBF) portal provides access to various datasets related to education and research in Germany, including datasets at the school level by typology of schools on demographics, infrastructure, funding and educational performance. The platform is designed to be user-friendly, and the data are regularly updated. In addition, the Datenschule (Data School) and DatenmachenSchule (Data Making School project) are two initiatives promoting data literacy and using open data in education. They offer open educational resources, including tutorials, lesson plans and datasets, to support integrating open data into the curriculum and training programmes for educators to build their capacity to use data effectively and encourage community engagement. Germany has policies and regulations that mandate open data collection, publication and use, ensuring consistency and standardisation across the education sector (Veja et al. 2021). However, despite its advanced level, researchers highlight that there is still room for improvement in the availability and accessibility of open school data. Following the results of a wide assessment of online portals, they point out that very few portals provide direct metadata or indirect access (via API) to the usage metrics, which impacts in-depth analyses or evidence-based decisions of relevant stakeholders (ibid.). Although school-level data are available, there is a lack of data on educational outcomes, quality indicators and other metrics that could provide a more comprehensive picture of school performance. The report also highlights the need for greater standardisation and co-ordination in collecting and disseminating school data across Länder. In Germany, the 2021 amendments to the Open Data Act and Data Use Act aimed to enhance the availability of open data for various users. The open data strategy,³⁵ adopted in 2021, provides a framework for action to improve the federal open data ecosystem. Open data initiatives implemented have also promoted civic participation and supported research.

Greece: The Hellenic Statistical Authority (ELSTAT), a national public agency, provides general data on national school enrolment by education level, student demographics, teacher statistics and dropout rates. Historical data are provided for comparison. The data are regularly updated, and the portal is designed to reach a broad audience.

Holy See: There is no information available.

Hungary: The Hungarian Central Statistical Office (KSH) provides an extensive collection of educational data, allowing for a thorough analysis of Hungary's education system. The detailed data by education level and type of school, enrolment, expenditures, teachers by education level, education attainment and educational outcomes supports, and share of participants in formal education and training help inform policy making and research. The user-friendly interface and interactive tools on the KSH website enhance data accessibility and allow for tailored queries and visualisations, making the data more actionable for various stakeholders. The graduate career pathway system, managed by the National Education Authority, is an effective awareness-raising measure in education (European Commission 2022), providing valuable insights for young Hungarians

^{35.} Available at www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/moderne-verwaltung/open-data-strategie-der-bundesregierung.html, accessed 30 July 2025.

making higher education and career decisions by sharing data on salary ranges and gender distribution.

Iceland: Statistics Iceland collects annual data on students, staff and school operations in pre-primary schools, compulsory schools, upper secondary schools, colleges and universities. These data are mainly collected directly from the schools. The portal provides extensive data on enrolment, graduation rates and educational expenditure at the national and regional levels, with open access to downloadable and visual data formats. However, it does not detail student performance metrics. Another interesting initiative is the platform established by Reykjavik City Government – Reykjavik "primary schools on a map" and "All preschools" provide detailed information about pre-primary and primary schools in Reykjavik, focusing on location, contact information and educational and specific programme offerings. These two portals do not provide specific financial or performance data, but these data are available in reports and data published by municipalities. The sites are designed to be easily accessible so parents can find preschools and primary schools that meet their needs. However, this good practice applies only to Reykjavik city.

Ireland: The Central Statistics Office (CSO) – Education Statistics provides a range of educational statistics, including school level data and enrolment figures, graduation rates, educational attainment, performance metrics and teacher data. The CSO offers various tools for data visualisation. The Irish Government – Schools directory provides centralised resource information on educational institutions across Ireland. The data provided include detailed information about schools, such as their location, educational level, religious ethos, gender demographics, the language of instruction, contact details, enrolment figures, inspection reports, and whether they offer free or fee-based education. The data do not include financial information, detailed performance metrics or comprehensive evaluations of the schools. This directory is part of the broader government portal. Open data are increasingly seen as a catalyst for positive social change in Ireland. This is evidenced by the growing accessibility of data available (European Commission 2022).

Ireland's Open Data Strategy 2023-2027 outlines Ireland's strategic approach to enhancing the transparency and accessibility of public data, including educational data. It sets priorities for which datasets should be available and emphasises the importance of maintaining an open data portal where datasets are published in machine-readable formats. Moreover, the country is improving open data and its impact in critical spheres. Several tools have been established to assist and encourage public bodies to evaluate the reuse of their datasets and those from other public organisations. One such tool is the key performance indicator (KPI) tool,³⁶ which enables data publishers to track their datasets, including upload times, deletions and data currency. The KPI tool also allows public bodies to compare the quality of their data with others and monitor their progress over time (European Commission 2022). In addition, a network of open data liaison

^{36.} Available at https://data.gov.ie/kpi-report, accessed 30 July 2025.

officers has been created within public service organisations to serve as the primary contacts for open data initiatives. Over 90 officers actively promote and support open data practices within their institutions (ibid. 2022).

Italy: The Portale unico dei dati della scuola is a comprehensive platform managed by the Italian Ministry of Education that provides access to a wide range of educational data in Italy. This portal includes school data related to demographics, infrastructure, funding, teacher qualifications and student and school performance data. The portal offers detailed educational data at both school and regional levels. Most data are updated annually, with some updated quarterly. The platform integrates with national databases, allows advanced data queries for deeper analysis and provides tools for data visualisation. Data are provided in open formats, making it easy to download, use and share. The national open data portal tags dynamic data for the 2021-2023 three-year plan and supports data holders with regular assistance, webinars and specific documentation. Metadata are automatically uploaded to the portal, and user feedback is collected through various channels for continuous improvement (European Commission 2022). Italian law requires open data to be machine-readable, following EU directives on public sector information reuse.

Kazakhstan: A central open data e-government portal provides access to information on school enrolment procedures. The portal is quite detailed and practical. It provides a mobile version of the portal as well and has been adapted for use by visually impaired persons. Users can register students for various educational institutions online, submit necessary documents, and track the status of applications. The portal offers students access to examination results and academic performance data. These can include national standardised test results and other assessments, enabling parents and students to review performance metrics. The platform supports the issuance and verification of educational certificates and diplomas. This feature streamlines obtaining and validating academic credentials, reducing the need for physical document handling. Additional data at the school level include accessibility of educational institutions. The portal is periodically reviewed and updated following citizens' feedback and also includes several mobile apps for easy use through individual smartphones.

Different mobile apps are available. One of the apps provides information about kindergartens and their ranking in a specific region, helping parents to make an informed choice. Another app is dedicated to schools using the open data shared by the Ministry of Education and provides relevant information on schools for parents' use, such as addresses, names of directors, contact information, etc. The third app "Kazakhistanis Know" provides general information about the sector, including funding, PISA results, and so on.

In December 2023, the Ministry of Education, together with the Ministry of Digital Development, Innovations and Aerospace Industry launched a new digital document "Education Information" in the eGov Mobile application. Through this new app information about a child's education is now available in the eGov Mobile application in the form of a digital document. By using this app there is no need to go to the school, kindergarten or college to get a certificate from an educational

institution – this can be downloaded through the app. The app provides all the information needed regarding students, such as their personal identification number and personal data, age group and class or group they attend in the education system, from kindergarten to higher education. The app helps parents to access digitally any information about their child's education and helps them obtain school transport cards and other services.

Latvia: The Central Statistical Bureau of Latvia provides data on student enrolments for the academic year. The data shared capture trends over the past decade. They include national demographic data and the geographical distribution of students, allowing for analysis of enrolment trends across different demographics and regions. There are no school-level data available. A national regulation (Cabinet of Ministers Regulation No. 611) mandates that national authorities regularly update data and metadata on the official Latvian open data portal. Differently from the other 25 EU member states, along with Luxembourg, Latvia lacks additional regional or local open data portals (European Commission 2022). The portal also includes a form for user feedback and recommendations.

Liechtenstein: The National Administration of Liechtenstein's Office of Education provides data related to schools in Liechtenstein, including information on school types, educational programmes and administrative details. This covers a range of educational institutions, from primary to secondary schools. The Statistikportal Liechtenstein provides detailed statistical data on schools. This includes student enrolment numbers, teacher statistics and educational outcomes, offering a broad view of the educational system. The data are broken down by school type and educational level, providing insights into various institutions and their performance. This includes detailed statistics on student numbers, teacher qualifications and other relevant metrics. Besides enrolment and performance metrics, data are also provided on educational programmes and institutions, as well as information on educational curricula and administrative aspects of schools. The available data often include historical trends, allowing for analysis of changes over time in various educational metrics.

Lithuania: The Official Statistical Portal of Lithuania, specifically the Schools Dashboards, is a pivotal resource for accessing and analysing detailed school data. Managed by Statistics Lithuania, this platform offers comprehensive insights into various aspects of the educational system. More specifically, the Schools Dashboards provide extensive datasets on a wide range of educational metrics, including data on student demographics – enrolment numbers, age distribution, and socio-economic backgrounds; school infrastructure – school facilities, including the number of classrooms, technological resources and physical infrastructure; data on the availability and distribution of educational materials, facilities and staff resources; and also school performance – metrics on academic achievements, school ratings, and educational outcomes. The platform features advanced visualisation tools that allow users to interact with data through graphs, charts and maps. Users can apply filters to view specific subsets of data and compare metrics across different schools, regions or time periods. The portal supports the generation of tailored reports based on user-defined parameters. However, the breadth and depth of available data can be overwhelming, and users may need advanced analytical skills to interpret complex datasets and draw meaningful conclusions effectively.

Luxembourg: Luxembourg's Edustat portal, operated by the Ministry of Education, serves as the primary repository for educational statistics. The portal encompasses data across all educational levels, including enrolment data, teacher statistics, educational attainment, and student performance metrics. The dashboard of the Ministry of National Education (https://edustat.script.lu/fr), besides the nationallevel data, allows the public to consult the data of a specific school (subject to access rights). Data are regularly updated, and users can access historical data to examine trends and changes in the educational landscape over time. The website allows users to view and download statistics in various formats without restrictions. The national open data portal of Luxembourg (data.public.lu) emphasises the significance of machine-readable formats in promoting the reuse of open data and its practical impact. The open data team also provides hands-on support to data providers (European Commission 2022). The open data strategy in Luxembourg encourages public institutions to make data widely available, emphasising complete and standardised metadata. Data are shared through national or institutional websites, using links and APIs to maintain data consistency and provide live access. The strategy includes a KPI system to assess metadata quality. Additionally, the freedom of information law requires public bodies to appoint data publication officers, and regular training sessions are held to promote transparency and data management (ibid.). Frequent training sessions are conducted on transparency, interoperability, open data and data management.

Malta: The Malta open data portal is designed to provide open access to a wide range of government datasets, including those related to education. It includes statistics on the number of students enrolled across different educational levels and institutions, teacher statistics and educational outcomes. The data are generally presented at a national level, covering various centres and programmes across Malta. Specific details about individual schools or regions are not prominently featured. Data are updated regularly and are openly accessible to the public in user-friendly formats such as CSV and Excel (XLS). Best practices include a unified platform for diverse datasets and interactive features for data visualisation.

Moldova: The statistical databank is maintained by the National Bureau of Statistics of Moldova. This government agency is responsible for collecting, processing and disseminating statistical data, including education statistics. Information includes educational enrolment and attainment by education level, graduation rates, institutional data – including information about the facilities and resources available (number of schools, class sizes and access to technology), teacher statistics and demographic breakdown (by gender, age, region and sometimes by specific groups) with data available at the national, regional and occasionally local levels, depending on the type of information. The data are often provided in several formats, such as web-based tables, and in downloadable formats, such as Excel (XLS) or CSV, reports and publications. Financial information about individual schools, such as budgets, funding or specific performance metrics like student test scores, is not typically included in the public data released by Moldovan educational authorities. The Open Data

Readiness Assessment (Gumene 2017) recommends adopting best practices for open data management, including increased data availability and engagement. The assessment also highlights the need to make data more accessible and user-friendly.

Monaco: The MonServicePublic platform provides a list of primary and secondary schools in Monaco, detailing their names, addresses and contact information. An interactive map visualises the locations of these institutions, enhancing geographical transparency and accessibility. The platform primarily focuses on institutional locations and basic contact details. It does not include more in-depth data such as school performance metrics, enrolment figures, or socio-economic context. The website also provides relevant legal frameworks on education and practical links by education level for parents to consult before enrolling their children.

Montenegro: The Statistical Office of Montenegro (MONSTAT) provides national statistics on various education levels, including pre-primary, primary, secondary and higher education. These datasets help users the understand the Montenegro education system's overall structure and performance over time. MONSTAT provides annual reports that summarise key findings in the education sector. No school-level data have been published on this website.

The Netherlands: The DUO open education data platform provides access to public data and publications on government-funded education in the Netherlands. The platform combines various datasets on educational indicators at the national level of education and school levels, such as data related to demographics, infrastructure, school facilities, funding, teacher qualifications and school and student performance. Data are provided in open formats, making them easy to download, use and share. In addition, the Open Education Holland initiative supports the creation and dissemination of open educational resources and encourages using open data to improve educational outcomes. Key features include education resources, community engagement and innovative practices. Finally, the Dutch Ministry of Education has launched an open education application programming interface (API) to provide easier access to educational data at the municipal and national levels. This API allows developers to create applications and tools that utilise educational data to support decision making and improve educational outcomes. Key features of API include programmatic access, developer support and enhanced accessibility. The Netherlands has established clear policies and regulations that mandate open data collection, publication and use.

North Macedonia: The MakStat database provides access to a wide range of educational statistics in North Macedonia. It includes national and regional data related to primary education, such as school registration, demographic information, enrolment figures and information on the number of registered schools, including their geographical distribution and operational status. The MakStat platform offers a user-friendly interface with various data extraction and visualisation options. Users can generate reports and view data in different formats.

Norway: The GeoNorge education and research platform is part of Norway's national geospatial data infrastructure. It provides geospatial data and information related to various sectors, including education and research. The Norwegian Mapping Authority manages the platform and collaborates with various governmental and educational institutions. This platform includes datasets related to education and research, maps, spatial analysis data and other geospatial datasets that support research and education planning. The platform allows users to visualise and analyse spatial data relating to education, which can be used for urban planning, school placement and understanding geographical disparities in education. It contains information by education level, ownership, contact information and address, number of students and teachers. The data are openly accessible to the public, with an interactive map interface that allows users to explore and download datasets. Users can filter data based on various parameters, such as location, type of institution and other geospatial characteristics. Data can be downloaded in various formats suitable for geographic information systems (GIS) software, such as Shapefiles, GeoJSON, and keyhole markup language (KML), which facilitates detailed spatial analysis and research. The data on GeoNorge is periodically updated.

The national school register (NSR) database is managed by the Norwegian Directorate for Education and Training (Utdanningsdirektoratet). The platform contains information by municipality and school, including location, type, contact information, capacity, student enrolment numbers and staff details. Detailed financial data and performance metrics are not included. The data are updated regularly and designed to be easily navigable. The information is presented with options for search engine filters but does not offer map visualisations, dashboards or downloadable spreadsheets. Norway has been identified as a pioneer in making detailed curricular and pedagogical data available, enabling the analysis of teaching methods and educational outcomes.

Poland: The register of schools and educational institutions (RSPO) provides a centralised database for all schools and educational institutions in Poland. The Ministry of Education and Science manages this database. The RSPO includes comprehensive information on various educational institutions, including primary, secondary and higher education institutions. The data include names and types of schools and educational institutions, their addresses and contact details; their operational status – whether the institution is currently operational, closed or has another status; details on the levels of education provided by each institution, including the grade levels and types of programmes offered; as well as general school statistics about the number of students and teachers at each institution. But it does not include performance metrics. The RSPO portal provides basic and organisational information about schools and educational institutions. It does not include detailed demographic information on students, financial data or performance metrics for each school. The RSPO is accessible through a user-friendly web interface with limited accessibility features.

In Poland, the Chancellery of the Prime Minister manages open data through the Open Data Programme and Open Data Act. It collaborates with ministries and Statistics Poland on high-value dataset regulations involving stakeholders and open data officers.³⁷ Poland also has plans for "opening data schedules"³⁸ to ensure timely data publication and an "APIs development plan"³⁹ to enhance API access under the 2021-2027 Open data programme. The Polish open data portal offers multimedia training on handling open data and preparing data in open formats. This training includes tutorials on publishing data on the portal, automating data uploads using XML files, and effectively adding datasets and resources.

Portugal: The open data education, science and technology platform in Portugal is a comprehensive resource that provides access to a wide range of datasets related to education, science and technology. This platform includes various datasets related to national and regional demographics, infrastructure, school facilities, funding and teacher qualifications. The open data portal features an intuitive interface, allowing users to easily navigate and access the datasets. The platform provides tools for data visualisation. Data are provided in open formats, making it easy to download, use and share. Other websites, such as https://infoescolas.medu.pt/ or www.dgeec.medu.pt, provide mainly regional education data. These datasets help to understand the educational system's different facets and allow for comprehensive analysis.

Romania: The open public data portal, managed by the Romanian Ministry of Education, provides access to various datasets covering different aspects of the education system in Romania. The portal includes datasets for different academic years, providing national-level data on student demographics, performance metrics, infrastructure, etc. However, the latest available datasets published cover the academic year 2020-2021.

San Marino: The Osservatorio Scuola initiative in San Marino provides a platform for accessing various types of general educational data, such as details about the elementary school system, including the number of school buildings and their distribution based on population density. The portal includes information on special educational needs programmes and various school projects and events. It also provides enrolment information for the upcoming school year, calendars, service charters, maps and icons in order to locate and get information about specific school buildings. Data on the platform is regularly updated.

Serbia: The open data hub in Serbia is a central platform that provides access to various open datasets from different sectors, including national and regional data on education. In Serbia, there is also an open school data initiative – the Serbian Schools Project, managed by an NGO. This initiative provides data on various aspects of schools, including the address, website, curriculum, languages of instruction, additional languages, contact information and details of the school

^{37.} See www.gov.pl/web/cyfryzacja/pelnomocnicy-ds-otwartosci-danych, accessed 30 July 2025.

^{38.} See https://dane.gov.pl/pl/knowledgebase/useful-materials/harmonogramy-udostepniania-danych, accessed 30 July 2025.

^{39.} See https://dane.gov.pl/pl/knowledgebase/useful-materials/program-otwierania-danych-na-lata-2021-2027, accessed 30 July 2025.

director. However, it is noted that some data might not always be available. The project aims to offer comprehensive information about schools across Serbia but does not have governmental backing, which might limit the consistency and availability of some datasets.

Slovak Republic: The Statistical Office of the Slovak Republic provides a range of open data related to education through its online platform. These data include detailed indicators on various aspects of the education system, including national-level demographic information, enrolment rates, graduation rates and teacher qualifications.

Slovenia: The Open Data of Slovenia (OPSI) platform is a central repository that provides access to various educational, cultural and public sector datasets. In addition, the National Statistical Office includes data on enrolment statistics at national, municipal and school levels; funding allocations; school performance and other educational indicators. The platform aggregates data from multiple educational institutions and government bodies, providing a broad overview of the country's education system. OPSI and the National Statistical Office websites have a user-friendly interface, making it easy for users to search for and access the required data. The web pages ensure that data are regularly updated to reflect current information, supporting transparency and accountability in the education sector. The open data policy is integrated into a broader legislative framework, including the Access to Public Information Act and the Integrity and Prevention of Corruption Act. All ministries and public agencies publish and maintain open data following established guidelines.

Spain: The open data education portal provides access to various educational datasets. This platform is part of Spain's broader open data initiative, which aims to make government data accessible to the public. The portal offers a data catalogue that includes various educational datasets and educational resources, including education information at the national and regional levels. The platform features an intuitive interface, allowing users to navigate and access the datasets easily. Data are provided in open formats, making them easy to download, use and share. The national open data initiative team has established multiple communication channels to engage with the open data community, including monthly campaigns, newsletters and meetings with regional and sector-specific open data managers (European Commission 2022). Feedback from the community is encouraged through dedicated mailboxes and regular work meetings, and monitoring data reuse is done through dashboards, which encourages the development of data communities.

As education is a decentralised function, most of the school-level data are available on the individual websites of the regions. For example, the directory of educational centres in Catalonia primarily provides regional-level data specific to Catalonia, including information on school locations, contact details and basic characteristics such as public or private status, but it does not offer performance metrics like student test scores or graduation rates, nor comparability options. These data are presented on a map and are available for download, allowing users to compare different regional educational centres.

Sweden: The Skolverket portal is managed by the Swedish National Agency for Education, which is the central administrative authority for the public school system that publicly organises preschooling, school-age childcare and adult education in Sweden. The Skolverket statistics search tool provides various data, including financial data on education costs – information about the costs associated with different levels of education (for example preschool, primary, secondary and adult education). The data include various expenses, such as school infrastructure, operational costs, teacher salaries and additional educational support services. They also cover demographics and performance metrics, including school-level data on student demographics, school performance and educational outcomes such as graduation rates and standardised test scores. The data shared through this website are highly granular, offering breakdowns by different types of educational institutions (public vs. private), geographical regions (municipalities) and specific cost categories. The statistics available include historical data, which can help identify changes in funding patterns, cost allocations and their correlation with educational outcomes. The statistics tool is openly accessible to the public, allowing users to customise their searches based on specific parameters. Data can be downloaded in various formats, including Excel (XLS) and CSV, making them easy to manipulate and analyse. Updates are made annually after new data from schools and municipalities are released annually. The latest data typically cover the most recent complete academic or fiscal year. Sweden combines educational data with broader social metrics, offering a holistic view of the factors influencing educational success.

Stockholm open data – the preschool and school portal provides information on preschool and school locations, enrolment and capacity, performance metrics and facility details. The portal shows the locations of preschools and schools in Stockholm through interactive maps. Users can easily access and download data.

Switzerland: The central open data portal for Switzerland opendata.swiss, provides access to various datasets from the public sector, including data related to education. The specific section dedicated to education aggregates datasets from multiple sources, such as Swiss public sector organisations, including federal offices, cantonal administrations and local municipalities. The main data contributors are the Federal Statistical Office (FSO), the Swiss Conference of Cantonal Ministers of Education (EDK) and other regional education authorities. The portal provides demographics, information on student enrolment rates across different education levels (primary, secondary, tertiary) and performance indicators, including graduation rates, student progression rates and standardised test scores. Data also include financial information, such as public expenditure on education, cost per student, and funding allocation by education level or region, as well as data on educational staff, including numbers, qualifications, demographics and salaries. Data are available nationally or at the regional/ canton level. The data includes indicators such as the number of schools, student enrolments, graduation rates, teacher qualifications and school funding. Datasets offer time-series data and are openly accessible online or can be downloaded in various formats (CSV, Excel, JSON and XML). The platform provides APIs enabling programmatic access to data.

Türkiye: The Turkey statistics portal, managed by the Turkish Statistical Institute (TURKSTAT), provides educational datasets. The available information includes national data on enrolment and graduation rates, student–teacher ratios, and more. The portal offers a wide range of data for all education levels. The data are regularly updated, and the platform is accessible and easy to use, providing data in various formats, including tables and graphs. Another portal is the OpenData project under the Digital Transformation Office of the Presidency of the Republic of Türkiye (CBDDO), which focuses on making data, including general educational data, available to the public. However, school-level data have not been published.

Ukraine: The register of subjects of educational activity is an open data platform maintained by Ukraine's Ministry of Education and Science, which is responsible for formulating and implementing education policy in Ukraine, including managing and disseminating educational data. The type of data available on the platform includes information about secondary education institutions, such as institution names and types (for example public, private), and their organisational forms; location details and contact information (including postal code, allowing for geographical analysis); information about the specific educational programmes and curricula offered at each institution. These data are provided at the individual school level. The platform provides open access to its data without any restrictions. The data can be accessed directly through the website in various formats. Users can search for specific schools or filter data based on criteria such as location, type of institution and programmes offered. However, the platform does not include financial information such as budgets, funding allocations or detailed performance metrics like student outcomes or school rankings. The data focuses on schools' structural and organisational aspects rather than their performance, funding and expenditures. Such information might be traceable in the reports the ministry or local authorities produce but are not reflected on the platform. Overall, the data on the platform are periodically updated. The most recent updates seem to cover data up to 2024. However, specific indicators updates vary.

United Kingdom (England): School data are provided through two main portals, Get information about schools (GIAS) and the National pupil database (NPD), managed by the Department for Education (DfE). The GIAS portal provides information on educational establishments across England, focusing on school profiles, including primary schools, secondary schools, academies, free schools, special schools and colleges, institutional information such as name, address, contact information, type of school (for example community, academy, voluntary aided), age range and religious character (if applicable), as well as information on schools' operational status - including historical data about past statuses (for example if a school has merged, been renamed or is undergoing significant changes). The portal does not provide direct financial information on schools, but users are directed to other platforms like the Schools financial benchmarking service for further information. The GIAS website focuses mainly on institutional information; it provides links to related resources where users can access performance data, such as the Ofsted website, which includes inspection reports on schools, exam results and school ratings, together with detailed data on school performance and comparison data. The GIAS website is regularly updated and is fully accessible to the public. It also provides detailed data online, which can be downloaded in CSV format.

Unlike some open data platforms, access to the NPD is controlled to protect pupil privacy and confidentiality. Users must apply for access, specifying their research purposes and demonstrating how to handle the data securely. Researchers and analysts must undergo a rigorous application process, including ethical approval and data protection compliance checks, to access detailed NPD datasets. While individual-level data require authorisation, some aggregated data and summaries are available publicly on the platform, providing overviews and insights without compromising individual privacy. The data within the NPD are updated annually, in line with the Department for Education's academic calendar and data collection cycles.

Abbreviations

AI Artificial intelligence

AMDAC Administration Ministérielle des Données, des Algorithmes et des

Codes sources

API Application programming interface

ARES Académie de Recherche et d'Enseignement Supérieur (Belgium)

ARMSTAT Statistical Committee of the Republic of Armenia

BHAS Agency for Statistics of Bosnia and Herzegovina

BI Business intelligence

BMBF Federal Ministry of Education and Research (Germany)

CBDDO Digital Transformation Office of the Presidency of the Republic of

Türkiye

CPEDU Steering Committee for Education of the Council of Europe

CSO Central Statistics Office (Ireland)

CSV Comma-separated values

CYSTAT Cyprus Statistical Service

CZSO Czech Statistical Office

DCAT-AP DCAT Application profile for data portals in Europe

DfE Department for Education (United Kingdom)

DINUM Interministerial Digital Directorate (France)

EDK Swiss Conference of Cantonal Ministers of Education

EDUFI Finnish National Agency for Education

EES Explore Education Statistics (United Kingdom)

EFTA European Free Trade Association

ELSTAT Hellenic Statistical Authority

EMIS Educational management information systems

ETICO IIEP online resource platform on ethics and corruption in

education

ETINED Council of Europe Platform on Ethics, Transparency and Integrity in

Education

EU European Union

FSO Federal Statistical Office (Switzerland)

GIAS Get Information about Schools (United Kingdom)

GIS Geographic information system

GPT Artificial intelligence generative pre-trained transformers **IIEP-UNESCO** UNESCO International Institute for Educational Planning

INSTAT Institute of Statistics (Albania)

KML Keyhole markup language

KOSKI National registry and data transfer service for study rights and

completed studies (Finland)

KPI Key performance indicators

KSH Hungarian Central Statistical Office

MakStat North Macedonia statistical database

MEC Ministry of Education and Culture (Finland)

MONSTAT Statistical Office of Montenegro

NGO Non-governmental organisation

NPD National pupil database (United Kingdom)

NSI Republic of Bulgaria's National Statistical Institute

NVAO Accreditation Organisation Dutch-Flemish

OECD Organisation for Economic Co-operation and Development

OPSI Open Data of Slovenia

PIA Public Information Act (Estonia)

PISA Programme for international student assessment

RSPO Register of schools and educational institutions (Poland)

SDG Sustainable development goal

SMIP Management information system for pre-university education

(Albania)

SPI Social position index

TURKSTAT Turkish Statistical Institute

UNESCO United Nations Educational, Scientific and Cultural

Organization

VET Vocational education and training

VLUHR Flemish Higher Education Council (Belgium)

The report

This report provides an overview of the current state of open school data in the States Parties to the European Cultural Convention represented at the Steering Committee for Education (CDEDU) of the Council of Europe, highlighting major trends, key practices, challenges and innovations. It evaluates the publicly available data types, the governance structures supporting these initiatives, and their impact on educational systems. The report also formulates recommendations to show the way forward. Overall, it offers valuable insights into how open school data can serve as a powerful tool for improving educational transparency and accountability.

The authors

Muriel Poisson leads the UNESCO International Institute for Educational Planning (IIEP-UNESCO)'s team on knowledge generation and mobilization. She is also the task manager of the Institute's comprehensive capacity-building programme on ethics and corruption in education.

Elira Jorgoni has over 20 years of consulting experience in governance, employment and public policies in support of government institutions and civil society organisations, working with various local and international teams.

Sales agents for publications of the Council of Europe Agents de vente des publications du Conseil de l'Europe

BELGIUM/BELGIQUE

La Librairie Européenne -The European Bookshop Rue de l'Orme, 1

Rue de l'Orme, 1

BE-1040 BRUXELLES

Tel.: + 32 (0)2 231 04 35

Fax: + 32 (0)2 735 08 60 E-mail: info@libeurop.eu

http://www.libeurop.be

Jean De Lannoy/DL Services c/o Michot Warehouses Bergense steenweg 77 Chaussée de Mons

BE-1600 SINT PIETERS LEEUW

Fax: + 32 (0)2 706 52 27

E-mail: jean.de.lannoy@dl-servi.com http://www.jean-de-lannoy.be

CANADA

Renouf Publishing Co. Ltd. 22-1010 Polytek Street CDN-OTTAWA, ONT K1J 9J1

Tel.: + 1 613 745 2665

Fax: + 1 613 745 7660

Toll-Free Tel.: (866) 767-6766 E-mail: order.dept@renoufbooks.com

http://www.renoufbooks.com

FRANCE

Please contact directly / Merci de contacter directement Council of Europe Publishing Éditions du Conseil de l'Europe F-67075 STRASBOURG Cedex Tel.: + 33 (0)3 88 41 25 81 E-mail: publishing@coe.int

http://book.coe.int Librairie Kléber

1, rue des Francs-Bourgeois F-67000 STRASBOURG Tel.: + 33 (0)3 88 15 78 88

Fax: + 33 (0)3 88 15 78 80 E-mail: librairie-kleber@coe.int

http://www.librairie-kleber.com

NORWAY/NORVÈGE

Akademika Postboks 84 Blindern NO-0314 OSLO

Tel.: + 47 2 218 8100 Fax: + 47 2 218 8103

E-mail: support@akademika.no http://www.akademika.no

POLAND/POLOGNE

Ars Polona JSC 25 Obroncow Street

PL-03-933 WARSZAWA

Tel.: + 48 (0)22 509 86 00 Fax: + 48 (0)22 509 86 10

E-mail: arspolona@arspolona.com.pl

http://www.arspolona.com.pl

PORTUGAL

Marka Lda

Rua dos Correeiros 61-3 PT-1100-162 LISBOA Tel: 351 21 3224040

Fax: 351 21 3224044

E-mail: apoio.clientes@marka.pt

www.marka.pt

SWITZERLAND/SUISSE

Planetis Sàrl

16, chemin des Pins

CH-1273 ARZIER

Tel.: + 41 22 366 51 77

Fax: + 41 22 366 51 78

E-mail: info@planetis.ch

UNITED KINGDOM/ROYAUME-UNI

Williams Lea TSO

18 Central Avenue

St Andrews Business Park Norwich

NR7 0HR

United Kingdom

Tel. +44 (0)333 202 5070

E-mail: customer.services@tso.co.uk

http://www.tsoshop.co.uk

UNITED STATES and CANADA/ ÉTATS-UNIS et CANADA

Manhattan Publishing Co 670 White Plains Road

USA-10583 SCARSDALE, NY Tel: + 1 914 472 4650

Fax: + 1 914 472 4316

E-mail: coe@manhattanpublishing.com http://www.manhattanpublishing.com Open school data is an important part of the broader move towards more open government across Europe and has the potential to improve educational outcomes for learners. However, while some countries have advanced frameworks supported by strong technologies, others are still in the early stages of development, with limited access to granular data.

This report explores the implementation of open school data across States Parties to the European Cultural Convention, represented in the Council of Europe's Steering Committee for Education. Developed by UNESCO International Institute for Educational Planning (IIEP-UNESCO) in conjunction with the Council of Europe, it draws from a comprehensive desk review, an online survey sent to all states parties and in-depth interviews with selected countries on their open school data practices.

Key findings reveal several challenges: inconsistent data standards, outdated technological infrastructure, limited capacities and awareness, and resistance due to concerns over scrutiny, equity and privacy. Yet countries have developed innovative approaches. "Open by default" policies, use of artificial intelligence, application programming interface and data visualisation tools, and data literacy campaigns showcase the potential of open school data to enhance transparency and data-driven decision making in education.

Recommendations focus on improving the quality of data, promoting public engagement, fostering peer learning and international collaboration and developing an open school data maturity index – all actions aimed at stronger open governance and improved learning across European education systems.

https://www.coe.int/etined



human rights organisation. It comprises 46 member states, including all members of the European Union. All Council of Europe member states have signed up to the European Convention on Human Rights, a treaty designed to protect human rights, democracy and the rule of law. The European Court of Human Rights oversees the implementation

of the Convention in the member states.

The Council of Europe is the continent's leading

www.coe.int

http://book.coe.int ISBN 978-92-871-9601-9 (PDF) €13/US\$26



