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United Nations
Educational, Scientific and
Cultural Organization

International Institute
for Educational Planning

Open School Data: What Planners Need to Know

Ethics and Corruption in Education

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Presentation of the Series: Ethics and Corruption in Education

Studies conducted over the last two decades have emphasized the negative impact of corruption on the economic, social, and political development of countries. Corruption increases transaction costs, reduces the efficiency of public services, distorts the decision-making process, and undermines social values. Moreover, corruption tends to contribute to the reinforcement of inequities by placing a disproportionate economic burden on the poor and limiting their access to public services. For this reason, fighting corruption has become a major concern for policy-makers and actors involved in improving public administration.

A review of the literature highlights a number of global and sectoral attempts to tackle the issue of corruption. However, it appears that the education sector has not received adequate attention from national education authorities and donors, despite numerous grounds for prioritizing the challenge of combating corruption in education:

— Public sector reforms aimed at improving governance and limiting corruption-related phenomena cannot produce significant results unless adequate attention is paid to the education sector, as in most countries this constitutes the largest or second-largest public sector in both human and financial terms.
— Any attempt to 'ensure inclusive and quality education for all and promote lifelong learning' (Sustainable Development Goal 4) will be undermined if problems related to corruption are not properly addressed. Such issues

Presentation of the Series

have severe implications for the efficient use of resources and quality of education and school performance.

— Lack of integrity and unethical behaviour within the education sector are inconsistent with one of the primary aims of education – to produce 'good citizens' respectful of the law, human rights, and equity. They are also incompatible with any strategy that considers education as a principal means of fighting corruption.

In this context, in 2001 the UNESCO International Institute for Educational Planning (IIEP-UNESCO) launched a comprehensive research and capacity development programme entitled 'Ethics and Corruption in Education'. Corruption is here defined as the systematic use of public office for private benefit which results in a reduction in the quality or availability of public goods and services. The main objective of this programme is to improve decision-making and the management of education systems by integrating transparency and anti-corruption concerns into methodologies of planning and administration of education.

The programme includes publications on topics such as formula funding of schools; decentralization and corruption; transparency in pro-poor education incentives; the adverse effects of private supplementary tutoring; the design and effective use of teacher codes of conduct; transparency in textbook management; and academic integrity. It also includes tools to help countries develop methodologies for assessing corruption in education, such as public expenditure tracking surveys or integrity assessments. More recently, it has paid specific attention to public access to information in education, with two new research projects devoted to open school data and open government in education.

Presentation of the Series

All related resources are available on ETICO (http://etico.iiep.unesco.org), a dynamic clearing-house for all information and activities related to transparency and accountability issues in education.

Jacques Hallak, Former IIEP-UNESCO Director, and
Muriel Poisson, IIEP-UNESCO Programme Specialist

Contents

Tables, figures, boxes, and maps 8
Abbreviations 12
Executive summary 14

Introduction 17

1. What is meant by open school data? 24
1.1. Defining open school data 24
1.2. Identifying major factors contributing to open data development 29
1.3. Distinguishing between management, participation, and mixed approaches 40
1.4. Considering differences between regions 48

2. How to choose the content and format for open school data 54
2.1. Selecting the data to be shared with the public 54
2.2. Mobilizing various sources of data 61
2.3. Favouring relevant data comparisons 70
2.4. Envisaging a wide range of formats for data presentation 75

3. How to plan for equal access to and efficient use of open school data 86
3.1. Who needs open school data and for what purposes? 86
3.2. Prioritizing the most relevant data for users 94
3.3. Ensuring equal access for all to data 99
3.4. Building the capacities of stakeholders in using school data 104
3.5. Monitoring outcomes and impacts of open school data 107

Contents

4. How to link open school data and accountability 115
4.1. Understanding various accountability models 115
4.2. Formulating a theory of change 121
4.3. Incorporating corruption concerns from the outset 134

5. Challenging open school data: What are the risks? 147
5.1. Over-simplification of complex issues 147
5.2. Misinterpretations and distrust of data 149
5.3. School competition and possible stigmatization 151
5.4. 'Empowering the empowered' 155
5.5. Power imbalance, tensions, and frustrations 158
5.6. Data privacy and tracking of individuals 161
5.7. Security issues in fragile contexts 164

6. Practical guidelines for designing and implementing open school data initiatives 169

References 181

Glossary of terms 186

Appendices 189
Appendix 1. Experiences in open school data initiatives worldwide 189
Appendix 2. Content of U-DISE school report cards in India 194
Appendix 3. Complaint handling procedures for Cek Sekolahku in Indonesia 198

Tables, figures, boxes, and maps

Tables

Table 1.	Chronology of adoption of selected open school data initiatives in different regions	30
Table 2.	Major factors contributing to open data development	40
Table 3.	Comparison of the management, participation, and mixed approaches	47
Table 4.	Main categories of publicized school data	59
Table 5.	Mapping data beneficiaries and reviewing their possible motivations	88
Table 6.	Data beneficiaries and identified purposes of information	90
Table 7.	Parents' assessment of the importance of publishing school data in Australia, Indonesia, Pakistan, and the Philippines	94
Table 8.	Percentage of parents who declared open school data to be 'most useful'	96
Table 9.	List of possible training topics by stakeholder	106
Table 10.	Expected outcomes from open school data initiatives	111
Table 11.	Three major domains of accountability affected by open school data	117
Table 12.	Four major drivers that link open school data and accountability	122
Table 13.	Main characteristics and advantages and disadvantages of each accountability model studied	136
Table 14.	Proportion of parents who reported using open school data to exert pressure on education or school authorities (by category of action)	144

Tables, figures, boxes, and maps

Figures

Figure 1.	Major actors and steps involved in the management approach	42
Figure 2.	Major steps involved in the participation approach	44
Figure 3.	Major steps involved in the mixed approach	46
Figure 4.	Which communication options offer greater data accessibility?	84
Figure 5.	Means used by parents to access Cek Sekolahku and Sekolah Kita in Indonesia	101
Figure 6.	Snapshots of open school data impacts	113
Figure 7.	Major steps involved in the planning of open school data initiatives	114
Figure 8.	Horizontal and vertical accountability within education systems	115
Figure 9.	Parents' reasons for selecting schools in Bangladesh (percentage; multiple response)	126
Figure 10.	Percentage of parents emphasizing the usability of different categories of data to fight corruption in Bangladesh	135

Boxes

Box 1.	Methodology used for the six IIEP-UNESCO case studies on open school data	21
Box 2.	Selected terms associated with school report cards	29
Box 3.	Exponential increase of data in the world	33
Box 4.	The right to access information held by public bodies	35
Box 5.	Long versus short routes of accountability	37

Tables, figures, boxes, and maps

Box 6.	New Public Sector Management	39
Box 7.	Illustration of the management-oriented approach: PMIU in Pakistan	42
Box 8.	Illustration of the participation-oriented approach: TIB school report cards in Bangladesh	44
Box 9.	Illustration of a mixed approach: School report cards in Ghana	46
Box 10.	Digitalization and synchronization of data: Learning from the experience of the PMIU in Pakistan	63
Box 11.	School self-evaluation: Learning from the experience of EDU-Q Card in Peru	65
Box 12.	A focus on school stakeholder issues: Learning from the experience of the Philippines	66
Box 13.	Verification and validation of data: Learning from the experience of Sekolah Kita in Indonesia	69
Box 14.	Conducting fair school comparisons: Learning from ICSEA	72
Box 15.	Design of heat maps to track school progress over time in Punjab, Pakistan	74
Box 16.	Limits to online databases: The example of PMIU in Punjab, Pakistan	81
Box 17.	Stakeholder interest in the publication of school data in the Philippines	89
Box 18.	The role of 'cultural brokers' in the Cek Sekolahku project, Indonesia	103
Box 19.	Monitoring of teacher and parent accountability through Indonesian school report cards	119

Tables, figures, boxes, and maps

Box 20. School performance during the Day of Excellence in Colombia 120
Box 21. School excellence reports and awards in Colombia 130
Box 22. Open school data: Communication or accountability? 143
Box 23. Complaint mechanisms under Mejora tu Escuela in Mexico 145
Box 24. ACARA's communication strategy for the release of school data 154
Box 25. Ethnic-based statistics in France 157
Box 26. Politicization of relationships at school level in Bangladesh 159
Box 27. Explaining the concept of personally identifiable information 162
Box 28. Examples of data that should not be disclosed 164

Maps

Map 1. Countries covered by IIEP-UNESCO's international research on open school data 22
Map 2. Selected open school data initiatives in Africa 49
Map 3. Selected open school data initiatives in Asia 51
Map 4. Selected open school data initiatives in Latin America 53

Abbreviations

ACARA	Australian Curriculum Assessment and Reporting Authority
AFD	Agence française de développement
AGEMAD	Amélioration de la gestion de l'éducation à Madagascar (Improving Education Management in Madagascar)
AGEPA	Amélioration de la gestion dans les pays africains (Improving Education Management in African countries Improving Education Management in African Countries
ANSA	Affiliated Network for Social Accountability
ASER	Annual Status of Education Report
BANBEIS	Bangladesh Bureau of Educational Information and Statistics
BOS	*Bantuan Operasional Sekolah* (School Operational Assistance Fund)
CMS	CheckMySchool
CVA	Citizen Voice and Action
DISE	District Information System for Education
DPE	Directorate of Primary Education
DepEd	Department of Education
EMIS	Educational management information system
ENLACE	Evaluación Nacional de Logro Académico en Centro Escolares (National Assessment of Schools' Academic Performance)
FOI	Freedom of information
GPE	Global Partnership for Education
ICFES	Instituto de Evaluación
ICSEA	Index of Community Socio-Educational Advantage
IIEP-UNESCO	UNESCO International Institute for Educational Planning
IMCO	Instituto Mexico para la Competitividad

Abbreviations

INSPIRE	School Performance Improvement, Review and Engagement
LITE	Leadership Initiative for Transformation and Empowerment
MEA	Monitoring and evaluation assistant
NGO	Non-governmental organization
NIEPA	National Institute of Educational Planning and Administration
NPM	New Public Management
NTA	National Taxpayers Association
PDSPK	Centre for Statistical Data of Education and Culture (Indonesia)
PEC	Primary Education Certificate
PII	Personally identifiable information
PITB	Punjab Information Technology Board
PMIU	Programme Monitoring and Implementation Unit
PTA	Parent–teacher association
RTI	Right to information
SMC	School management committee
SNIE	Sistema Nacional de Indicadores Educativos (National System of Educational Indicators)
SSIM	Supporting School Improvement
TB	Transparency board
TI	Transparency International
TIB	Transparency International Bangladesh
TII	Transparency International Indonesia
U-DISE	Unified District Information System for Education
UEO	*Upazila* Education Officer
UGEL	Unidades de Gestión Educativa Local
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development
WB	World Bank

Executive summary

The number of countries providing the general public with access to educational data has grown rapidly over the past decade, encouraged by new opportunities offered by information technologies and growing pressure from citizens for more transparency. A wide variety of initiatives have flourished accordingly, consisting of the publication of school-level information in the form of school report cards either in paper or electronic format – the school level being key to encouraging citizens to make best use of and act upon the information provided.

In some countries, governments have taken the lead in disseminating such data, relying on existing educational management information systems (EMIS). Elsewhere, civil society organizations have shown the way, placing the emphasis on community engagement. Open school data tend to become more comprehensive over time, with the inclusion of data on school inputs and school processes, as well as a growing number of school outputs. However, there is still much to learn about how to make open school data more useful as a tool to hold education stakeholders accountable for quality education for all, and to reduce malpractice.

In this context, this publication has been prepared to help decision-makers as well as educational planners and managers make informed decisions regarding access to practical, effective, and usable open school data. It argues that education authorities have much to learn from the experience of civil society in the area, emphasizing the need to shift from an administrative approach to a more citizen-centred perspective.

Executive summary

Building on the research conducted by IIEP-UNESCO in Africa, Asia, Australia, and Latin America, it draws lessons from more than 50 countries which have experimented with innovative approaches to increasing the usefulness of open school data and strengthening their impacts on transparency and accountability. More specifically, it builds on the results of six in-depth case studies carried out by IIEP-UNESCO in Australia, Bangladesh, India, Indonesia, Pakistan (Punjab), and the Philippines, Each of these studies compared government-led and citizen-led initiatives, and surveyed 250 school-level actors.

This publication consists of five major sections which respond to key questions that decision-makers, educational planners, and managers need to address when designing open school data policies.

It starts with a definition of open school data, which is understood to mean all information about school inputs, processes, and/or outputs shared with the general public, either in paper or electronic format. After reviewing the main factors that lead to the growth of open school data, it explains the distinction between management-oriented and participation-oriented approaches.

The publication presents the various categories of data that can be considered for sharing, namely school profiles, funding, condition of services, school governance and operation, efficiency and performance, and parent and pupil satisfaction. It then proceeds to describe successful approaches for presenting and disseminating data, paying particular attention to approaches and contexts most likely

to encourage communities to make active use of open school data, such as mothers' gatherings.

Recognizing the need to close the accountability loop, the publication analyses four major drivers that can help link open school data and accountability, emphasizing the relevance of the 'collaborative planning imperative' and user participation models. It then reviews the various actions required for formulating and supporting open school data initiatives from a user perspective, and describes a planning cycle that leads towards well-identified impacts (e.g. improved quality of EMIS information, better school planning, or empowered communities).

Finally, the publication alerts decision-makers and planners to a variety of risks associated with the introduction of open school data initiatives: over-simplification of complex issues, misinterpretation of data, school competition and stigmatization, elite capture, power imbalances, data privacy, and security issues in fragile contexts. For each of those risks, the book lists possible mitigation measures.

The last section presents practical guidelines on how to design and implement open school data policies, reviewing key points to ensure their impact and success. These are structured around seven steps: design a clear open data policy framework; prioritize critical data with potential to generate positive change; set up robust information management systems; explore attractive ways to present data; make sure that data are accessible to all; strengthen stakeholder capacities to act on information; and support efforts to improve accountability and fight corruption. For each of those, tips and suggestions for further action are provided.

Introduction

The current state of open school data initiatives

The number of countries providing the general public with access to educational data has grown rapidly over the past decade, encouraged by novel opportunities offered by new information technologies and the development of the internet. A wide variety of initiatives have been developed specifically to share school-level information in the form of school report cards – the school level being key to encourage citizens to make best use and act upon the information provided. In some countries, governments have taken the lead in disseminating such data, relying on existing educational management information systems (EMIS). Elsewhere, civil society organizations have taken the initiative to produce school report cards[1] for selected schools, placing the emphasis on community engagement. In many cases, both types of initiative co-exist.

School report cards provide key information about a school, including school funding, student enrolment, teacher numbers and qualifications, pupil/teacher ratios, conditions of school facilities, textbook availability, and student achievement. They are perceived as a powerful tool to enable citizens to exercise social control over the management of public resources, to stand up for their rights, and to hold schools accountable. Accordingly, strong expectations are placed on their development. But while school report cards are becoming increasingly common in all regions of the world, no real assessment has been made of which data are most effective in encouraging citizen action, and how best to publicize them to ensure impact. In addition, dialogue on those issues

1 Paper or electronic medium by which information about school inputs, processes, or outputs is presented.

between education sector managers and civil society organizations remains extremely limited.

This book has been prepared to help raise awareness among decision-makers, as well as educational planners and managers, of the importance of school report cards. The aim is also to share lessons drawn from the experience of a variety of countries which have experimented with innovative approaches to increasing the usefulness of open school data and their impact on transparency and accountability issues. Finally, the publication lays out the adequate safeguards that need to be put in place to ensure that all users benefit equally from open data initiatives, and that the latter do not result in elite capture of information. This is particularly relevant and timely, given the rapid growth in the amount of school data and the number of countries adopting school report cards.

What questions do open school data raise for planners?

More specifically, this publication intends to unpack the chain of actions necessary to develop open school data successfully, exploring questions related to design and implementation processes and answering basic questions related to the use of open school data by decision-makers, educational planners, and managers. These questions include the following:

- What kind of enabling legal framework can support the development of open school data initiatives?
- Which data are most suitable for promoting accountability while simultaneously monitoring corrupt practices?
- What format is most likely to encourage communities to make better use of open school data?

- What approach most effectively facilitates the active participation and engagement of the general public and their proper use of data?
- What can be done to ensure that the data provided benefit more than a small proportion of the population, and allow the entire education community to make informed decisions?
- What actions following the publication of school data have the greatest impact on issues related to transparency and accountability?
- What are the potential adverse effects of access to information both on education systems and on individuals?

What are the main objectives of this publication?

The main objective of this publication is to help decision-makers and educational managers in charge of access to information make informed decisions about access to practical, effective, and usable open school data, so as to promote transparency and empower citizens to fight against corruption. Moreover, it aims to encourage them to learn from the experience of civil society representatives in this respect, and to collaborate with them accordingly.

Building on IIEP-UNESCO's research on open school data

This publication builds on the results of the research conducted by the UNESCO International Institute for Educational Planning (IIEP-UNESCO) on 'Using open school data to improve transparency and accountability in education', which was carried out between 2016 and 2019. The main objective of this research was to compare the motivations, purposes, audiences, data sources, contents, uses, and impacts of

school report cards developed in different regions of the world. Specifically, the publication draws on the following products of the research:

- A review of the literature combined with a more in-depth analysis of 14 open school data initiatives implemented in different regions of the world (Cheng and Moses, 2016).
- A regional state-of-the-art paper on open school data in sub-Saharan Africa, reviewing 21 initiatives in 13 countries, accompanied by a more in-depth analysis of seven of these programmes (Dupain and Thu Phuong Nguyen, 2019).
- A regional state-of-the-art paper on open school data in Latin America, studying school indicators shared with the public in 15 countries, and detailing the main characteristics of seven of those (Brito, 2019).
- Six case studies on open school data projects carried out in the following countries: Australia, Bangladesh, India, Indonesia, Pakistan (Punjab), and the Philippines. Each of the case studies compares a government-led and citizen-led initiative, based on a survey of some 250 school-level actors (Bordoloi and Kapoor, 2018; Felicia, 2018; Khan, 2018; Parafina, 2018; Rabinowitz, 2018; Roy and Miah, 2018).

Introduction

BOX 1

Methodology used for the six IIEP-UNESCO case studies on open school data

The preparation of each IIEP-UNESCO case study included:

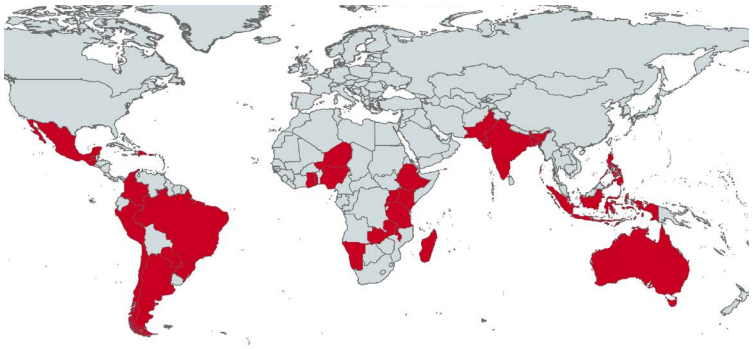
- a series of semi-structured interviews with key informants, i.e. individuals responsible for implementation of the right to information legislation, education sector managers, actors from civil society organizations involved in the empowerment of citizens through public access to data, members of parents' associations, and media representatives;
- a survey of 250 school-level actors, using a multi-stage stratified sample method to illustrate the diversity of perspectives and perceptions about the usefulness of open school data, taking into consideration socio-economic, educational, and geographical factors. Informants included head teachers, teachers, parent–teacher associations, parents, and community leaders.

Each case study investigates and compares the types of information published, as well as those responsible for its publication and how it is accessed; the most critical data for improving transparency and accountability; how the public accesses and utilizes the information; the conditions required to positively impact transparency and accountability in the education system; and the limits of such processes.

Altogether, more than 60 initiatives carried out in about 50 countries have been scrutinized as part of IIEP-UNESCO's research on open school data (see *Map 1*).

Introduction

Map 1. Countries covered by IIEP-UNESCO's international research on open school data



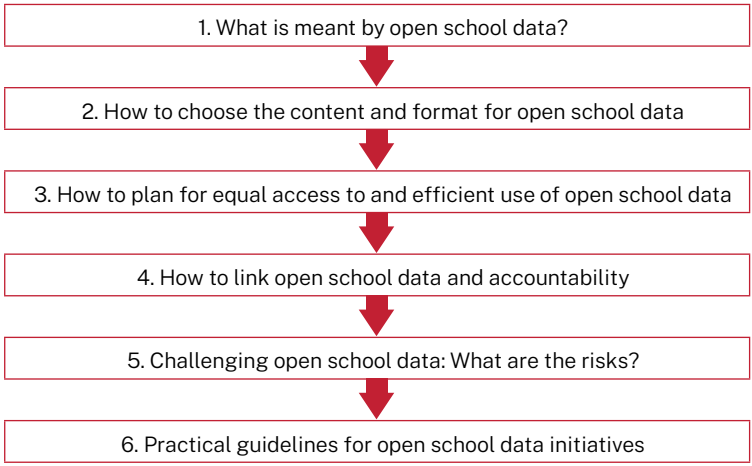
Note: The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. The final status of the Abyei area is not yet determined. The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.
Source: IIEP based in UN Cartographic Division

In addition, this publication capitalizes on the main conclusions of two major events organized as part of the same IIEP-UNESCO research programme:

- a study visit to Sydney and Canberra during October 2016, convened with the Australian Curriculum Assessment and Reporting Authority (ACARA), to learn from the *My School* experience, which brought together national teams from seven countries in the Asia Pacific region;
- an international policy forum organized in collaboration with the Philippines Department of Education, and held in Manila from 24 to 26 January 2018, which gathered together national policy-makers, civil society representatives, and researchers from 15 countries around the world.

How is this book structured?

This publication consists of six major sections, five of which examine the following basic questions that decision-makers, educational planners, and managers will have to address when initiating open school data policies:



Each section presents lessons learned from international experience, using the results of IIEP-UNESCO's research to provide a snapshot of a country case as an illustration of best practice, and drawing lessons for educational planners and managers on this basis.

The publication ends with **practical guidelines** on how to design and implement open school data policies, reviewing key points to bear in mind to ensure greater impact and success of such policies.

1. What is meant by open school data?

1.1. Defining open school data

General definition

'Opening school data' refers to the action of sharing with the general public school-level information, either in paper or electronic format. Such data are mostly quantitative, but are sometimes also qualitative, and can be used to help monitor the services provided by the school, hold school and education authorities accountable, and support their actions to achieve inclusive and equitable quality education for all in a collaborative manner. To be useful, they should be comprehensive, relevant, accurate, accessible, and timely.

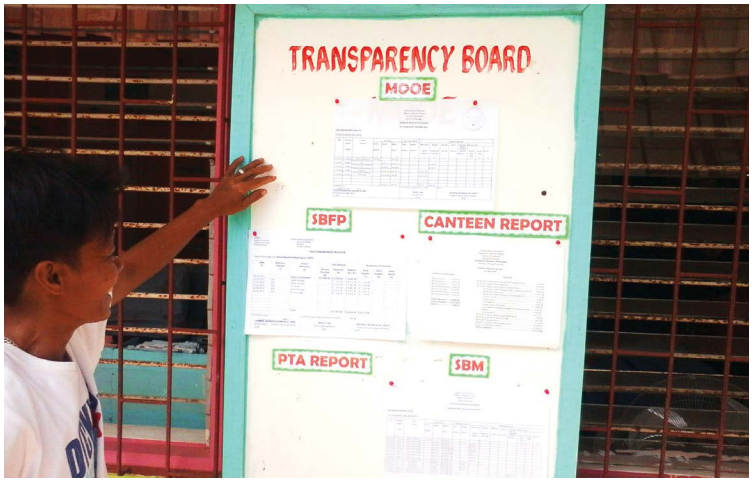
Open school data usually take the form of **school report cards**, which aggregate education data at the school level, and are generated either by government authorities or civil society organizations.

A wide variety of data can be displayed within this framework, related to school inputs (e.g. funding), processes (e.g. teacher attendance), or outputs (e.g. student achievement), and are usually presented in statistical form. However, they can also include more qualitative information about the school or its management (e.g. community participation).

Even though a variety of education data can also be shared at other administrative levels (e.g. districts, provinces, national), open school data are regarded as essential to encouraging citizens to act upon information, as schools are at the front-line of service delivery and are thus of immediate relevance and interest for users.

1. What is meant by open school data?

Open school data displayed on a 'transparency board' in a Filipino school



Source: Parafina, 2018.

Basic principles

School data can be considered 'open' if they are made public in a manner that complies with a series of basic principles, which are also applicable in other public sectors, and are usually determined by existing national legislation (Brito, 2019). Such principles can be summarized as follows:

- **Primary**. Data are primary data collected at the level of the school that have not been modified or aggregated with other data.
- **Accurate**. Data shared with the public are submitted to a rigorous collection process, which is subject to controls.
- **Comprehensive**. Displayed data characterize the dimensions they relate to in a comprehensive, detailed manner.

1. What is meant by open school data?

Their technical specifications are provided or available upon request.

- **Accessible**. Data are available to all without restrictions or need for registration. No one should be privileged or discriminated against in accessing them.
- **Free**. Data can be accessed without charge. No one should be asked to pay for access or required to offer any kind of service in exchange.
- **Timely**. Data are updated regularly and posted periodically to protect both their value and usability.
- **Freedom of use**. Data can be used freely for a variety of reasons (e.g. information, management, control, and analysis). They can be applied and reproduced through different formats.

Two other principles may be put forward: **comparability** (data are comparable over time and across schools) and **interoperability** (data are readable and usable under different systems). However, in the case of the education sector, such principles can apply to government-led initiatives but not necessarily to those led by civil society organizations.[2]

Open school data vs EMIS

The notion of open school data should be distinguished from that of educational management and information systems (EMIS), which are defined as a 'system for the collection, integration, processing, maintenance and dissemination of data and information to support decision-making, policy-analysis

2 Consult the principles of the international open data charter at: https://opendatacharter.net/principles/

and formulation, planning, monitoring and management at all levels of an education system' (UNESCO, 2008):

- Data included in EMIS are aggregated to provide indicators for all levels of the system, especially district, regional, and national levels, while open school data focus on the school level only.
- Open school data do not cover all the dimensions included in EMIS; they are much more selective and give priority to data considered as the most relevant and actionable for the general public.
- In most cases, open school data contain data included in EMIS, but this is not necessarily the case. Other indicators formulated locally can be added, especially in the case of civil society-led initiatives.
- Open school data target the general public, especially school stakeholders (i.e. school principals, teachers, school management committee [SMC] members, parents, and pupils), while EMIS target education authorities as their main users.
- Open school data aim to facilitate planning and management at the school level by engaging with front-line users, while EMIS aim to provide education authorities with the information needed for planning and management at higher administrative levels.

School report cards and other associated terms

The term **school report card** is often associated with open school data, as it is the medium through which open school data are shared with the general public. School report cards can thus be defined as the paper or electronic medium by which information about school inputs, processes, or outputs

is presented. In sub-Saharan Africa, the term 'school profiles' is also used, while in Latin America *cuadros de indicadores de las escuelas* (tables of school indicators) is preferred. In all cases, school report cards should not be confused with student report cards, which detail student grades.

> "I'm confused about the terminology they use. I think of students' grades when I hear of report cards.
>
> A parent in the Philippines (Parafina, 2018)

In some cases, school report cards are intended for internal use only by the school administration and/or education authorities; in other cases, they are made public as part of an open data policy for external use by the school community, and more broadly by all citizens.

Several other terms are associated with school report cards, especially when these are developed by communities and/or civil society organizations using participatory approaches (see the short glossary of terms provided below in *Box 2*). This is the case for community scorecards, which summarize subjective assessments of public service users regarding inputs, processes, and outputs, collected through a participatory process involving schools and communities. The way the information is presented also leads to different terms: in the case of school scorecards, for instance, school scores are presented through a numerical or letter scale based on a list of predetermined criteria selected to represent school performance or progress.

1. What is meant by open school data?

BOX 2

Selected terms associated with school report cards

Citizen report card: Summary of the results of a public service user satisfaction survey, intended to provide information for authorities and communities on service availability, delivery, and efficiency.

Community scorecard: Collated subjective assessments of public service users regarding inputs, processes, and outputs, collected through a participatory process.

School-education index: Composite score based on several indicators for each school, enabling users to compare schools and assess how a school evolves over time.

School scorecards: School scores presented through a numerical or letter scale, based on a list of predetermined criteria selected to represent school performance or progress.

Report cards can also exist at levels other than the school. Existing examples include school cluster report cards, district report cards, and regional/provincial report cards for internal or external use.

1.2. Identifying major factors contributing to open data development

The development of school report cards is not recent, and dates back to the 1990s (*Table 1*). Parafina (2018) notes that they 'were used as early as the 1990s' in the Philippines, and refers to a publication by Bautista (2005) that traces them

1. What is meant by open school data?

'back to the Department [of Education]'s 10-year master plan on decentralization, which covered the years 1995 to 2005'. Most initiatives, though, whether government-, donor-, or civil-society-driven, started between 2000 and the present, with a large concentration of cases between 2005 and 2015.

Table 1. Chronology of adoption of selected open school data initiatives in different regions

Starting date	Country	Name of the initiative	Initiator
1997	United States	Virginia School Report Card	State
2000	Bangladesh	Citizen Report Card Survey	Transparency International Bangladesh (TIB)
2003	Madagascar	School Report Card (Improving Education Management in African Countries [AGEPA])	World Bank (WB), Agence française de développement (AFD), United Nations Children's Fund (UNICEF)
2004	Ghana	School Report Card	Government, US Agency for International Development (USAID), WB
2005	India	School Report Card (District Information System for Education [DISE])	Federal government, National Institute of Educational Planning and Administration (NIEPA), UNICEF
2005	Mexico	School Report Card	Federal government
2007	Brazil	Basic Education Development Index	Federal government

1. What is meant by open school data?

Starting date	Country	Name of the initiative	Initiator
2008	Uganda	Citizen Voice and Action (CVA) Community Score Card	CVA
2009	Nigeria	Citizen Report Card	Leadership Initiative for Transformation and Empowerment (LITE)
2009	Philippines	School Report Card	Government
2010	Australia	My School	Federal government
2010	Philippines	CheckMySchool	Affiliated Network for Social Accountability (ANSA)
2012	Malawi	School Report Feedback	Link
2013	Guatemala	Ficha escolar	Government
2013	Mexico	Mejora tu Escuela	Instituto Mexico para la Competitividad (IMCO)
2013	Pakistan	School Report Card	Government, Programme Monitoring and Implementation Unit (PMIU), WB
2013	Rwanda	Community Score Card	Transparency International (TI) Rwanda
2013	Tanzania	Primary School Leaving Examination (PSLE) School Ranking	Government
2014	Indonesia	Cek Sekolahku	Transparency International Indonesial (TII)

1. What is meant by open school data?

Starting date	Country	Name of the initiative	Initiator
2015	Colombia	School Excellence Report	Government and Instituto de Evaluación (ICFES)
2015	Indonesia	Sekolah Kita	Federal government
2015	Peru	Semáforo Escuela	Government
2018	Peru	EDU-Q Card	Edukans

A wide variety of factors can explain the multiplication of initiatives over the last 15 years, some of which are not specific to the education sector and need to be placed in the wider context of public sector evolution. Four main sets of factors can be identified within this framework, namely: the data revolution; the demand for more democracy and citizen involvement; the accountability and anti-corruption agenda; and the focus on public sector evaluation and performance. These are described in more detail in the following sub-sections.

The data revolution

According to a 2014 report, prepared at the request of the United Nations Secretary-General, the data revolution is characterized by 'the explosion in the volume of data, the speed with which data are produced, the number of producers of data, the dissemination of data, and the range of things on which there is data, coming from new technologies such as mobile phones and the "Internet of Things", and from other sources, such as qualitative data, citizen-generated data and perceptions data' (Data Revolution Group, 2014). At the same time, the percentage of the world population using the internet has increased from less than 1 per cent in 1993 to

1. What is meant by open school data?

49.7 per cent in 2017 (World Bank data).[3] The digital divide remains and has never been as huge, with the proportion of internet users varying from 16 per cent for low-income countries to 85 per cent for high-income countries. However, the range of new opportunities offered by the data revolution and the internet is undeniable.

BOX 3

Exponential increase of data in the world

The volume of data in the world is increasing exponentially: one estimate has it that 90% of the data in the world has been created in the last two years. ... The volumes of both traditional sources of data (represented by the number of household surveys registered) and new sources (mobile subscriptions per 100 people) have been rising, and openness is increasing (numbers of surveys placed online). Thanks to new technologies, the volume, level of detail, and speed of data available on societies, the economy and the environment, is without precedent.

Source: Data Revolution Group, 2014.

Such evolution is noticeable in the education sector. Benefiting from the development of new technologies, EMIS have grown exponentially, thanks to the increased capacity to collect, manage, and produce a wealth of data over a much shorter period of time. In the case of India, for instance, the District Information System for Education (DISE), which was launched in 1995 in 42 districts from seven states, extended its

3 https://data.worldbank.org/indicator/IT.NET.USER.ZS

coverage from primary to secondary level, and to other states in 2001, then to all Indian districts in 2005/06. By 2015/16, the Unified District Information System for Education (U-DISE) covered a total of 1,522,346 schools (Bordoloi and Kapoor, 2018). The capacity to share this information, especially via the internet, also increased over the same period, raising the question of sharing with the public at least part of the information collected through EMIS. This was illustrated by the launch of school report cards by government authorities in India (2005), Mexico (2005), Philippines (2005), Australia (2010), Guatemala (2013), and Colombia (2013).

Access to information and citizen voices

A growing number of countries have adopted freedom of information (FOI) or right to information (RTI) laws, following the recognition of the fundamental right of freedom of expression (see *Box 4*). As estimated by UNESCO, the number of countries adopting such laws has increased from 13 in 1990 to over 90 today. Such laws rely on the 'fundamental premise that all information held by governments and governmental institutions is in principle public and may only be withheld if there are legitimate reasons, such as typically privacy and security, for not disclosing it' (UNESCO, 2020). This recognition of the right to information has to be viewed in the wider context of contemporary societies' democratization: citizens should not only be given access to information previously held by public bodies, their voice should be heard and their participation in public affairs sought more actively.

1. What is meant by open school data?

BOX 4

The right to access information held by public bodies

Freedom of Information, or the right to information, can be defined as the right to access information held by public bodies. It is an integral part of the fundamental right of freedom of expression, as recognized by Resolution 59 of the UN General Assembly adopted in 1946, and Article 19 of the Universal Declaration of Human Rights (1948).

It has also been enshrined as a corollary of the basic human right of freedom of expression in other major international instruments, including the International Covenant on Civil and Political Rights (1966) and the American Convention on Human Rights (1969).

FOI legislation reflects the fundamental premise that all information held by governments and governmental institutions is in principle public and may only be withheld if there are legitimate reasons, such as privacy and security, for non-disclosure. Over the past 10 years, the right to information has been recognized by an increasing number of countries, including developing ones, through the adoption of a wave of FOI laws.

Source: UNESCO, 2020.

This had, in turn, an influence on the education sector, compelling educational authorities to increase the amount of information that they share with the public, and to find new ways to promote public participation. The movement towards decentralization and school-based management

exemplifies this idea of bringing decision-making closer to users, and of involving communities in school functioning. In such a context, school report cards are key tools not only to bring information to the direct attention of all school actors, but also to foster participatory approaches at the school level. Their promoters assume, indeed, that the importance given by parents to education (in a context of increased literacy) will encourage them to access all available data related to their children's schooling, and to be more willing to participate in related decisions accordingly.

Accountability and anti-corruption agenda

The *2004 World Development Report* has theorized the importance of a 'short route' versus a 'long route' of accountability (see *Box 5*), especially in poor contexts. In the case of the short route, citizens find themselves in a direct relationship with front-line service providers (e.g. schools in the education sector). Regarding the long route, 'there is no direct accountability of the provider to the consumer' (World Bank, 2003): citizens can only influence decision-makers through their votes, and in turn decision-makers can influence service providers. According to the same report, the most vulnerable individuals encounter multiple obstacles to having their voice heard when the route to accountability is longer; hence the need to favour a shorter route by promoting social accountability at the level of front-line service delivery.

1. What is meant by open school data?

BOX 5

Long versus short routes of accountability

In the case of services such as health, education, water, electricity, and sanitation, there is no direct accountability of the provider to the consumer. Why not? For various good reasons, society has decided that the service will be provided not through a market transaction, but through the government taking responsibility. That is, through the 'long route' of accountability, whereby clients as citizens influence policymakers, and policymakers influence providers.

When the relationships along this long route break down, service delivery fails (absentee teachers, leaking water pipes) and human development outcomes are poor ... Given the difficulties in strengthening the long route of accountability, improving the short route – the client-provider relationship – deserves more consideration.

Source: World Bank, 2003.

For this to happen, access to school data is essential: 'Access to information for the public at large is indispensable for building participation, ownership and social control. As a result, those closest to the point of delivery – the school – must be sufficiently well informed not only to be able to detect fraud, but also to claim what they are entitled to receive' (Hallak and Poisson, 2007). In this context, open school data appears as a powerful tool to promote citizen control over the transfer and use of financial, material, and human resources; to hold local and school authorities to account; to tackle weaknesses in service delivery; to detect potential malpractice at school level; and, finally, to allow citizens to stand up for their rights.

1. What is meant by open school data?

Data-driven decision-making and culture of evaluation

Performance-based management was initially introduced in the business sector and has been applied to the public sector since the 1970s, building on the concept and techniques of New Public Sector Management (see *Box* 6). It consists of regularly assessing the performance of an organization by monitoring its progress against a set of objectives and measurable targets, with a view to improving its efficiency and results. It has encouraged the production of a variety of data by public administrations to enable performance monitoring to take place. Performance-based management builds on the idea of 'data-driven decision-making', according to which decisions should be taken using factual evidence and data. In this context, the development of school performance monitoring in the early 1980s in the United States (Figlio and Kenny, 2009) was structured by two main objectives: first, to promote education quality by focusing on outputs rather than inputs; second, to urge schools to deliver better results by holding them accountable for learning. This movement involved the multiplication of assessments at all levels of education systems, including the international level.[4] Brito (2018) describes how, over the past 30 years, almost all Latin American countries have made considerable efforts to evaluate different dimensions of their education systems down to the school level, and to design standardized instruments to assess student learning. School report cards can be seen as a product of such evolution, by giving the opportunity not only to education authorities but also to citizens to compare the results of a given school with national standards and/or other schools, and to hold schools accountable on this basis.

4 See cross-national learning assessments such as LaNA, PASEC, PILNA, PIRLS, PISA, SACMEQ, SEA-PLM, TERCE, or TIMSS (UNESCO-UIS, 2018).

1. What is meant by open school data?

BOX 6

New Public Sector Management

Over the last 20 years or so, public sector organizations have borrowed management practices from the private sector. The argument of *doing more with less*, which inspired New Public Management (NPM) reforms, introduced to the public sector the need for the explicit use of standards and performance measures (Hood, 1991). Governments of Western countries started to place greater emphasis on output control, reward systems, and results, rather than overlooking compliance with administrative rules and procedures. NPM-oriented reforms provided public managers with these new tools for achieving performance. However, the specific complexity of the public sector necessitates framing performance and adapting management tools and methods to such environmental aspects, as well as implementing these techniques by balancing different values within organizations.

Source: Vignieri, 2018.

1. What is meant by open school data?

The four factors mentioned in this sub-section are summarized in *Table 2*.

Table 2. Major factors contributing to open data development

The data revolution	Access to information and citizen voice
Increase in the volume, speed, and dissemination of data Enlarged access to the internet Building of comprehensive EMIS databases	Right to information laws Decentralization of public management Demand for citizen participation
Accountability and anti-corruption agenda	**Data-driven decision-making and culture of evaluation**
Holding public authorities accountable for the service provided Identification of bottlenecks and malpractice Development of social accountability approaches using information	Evidence-based decision-making Focus on public service quality Production of multiple datasets to monitor system performance and results

1.3. Distinguishing between management, participation, and mixed approaches

Open school data initiatives can serve a variety of purposes, and follow three main approaches: a management-oriented approach, a participation-oriented approach, and a mixed approach.

1. What is meant by open school data?

Management-oriented approach

Initiated by central public authorities, **management-oriented approaches** aim to improve school management by sharing school report cards with local authorities and school actors, in order to help them identify major bottlenecks, formulate school improvement plans, orient budgetary processes, and monitor progress and results – particularly in contexts of decentralization.

Management-oriented approaches are often used in contexts of decentralization or school-based management policies. Based on the concept of results-based management, they aim to use data to identify schools with high and low results, distributing funds using sanction and reward principles, and creating incentives for local and school actors to improve school performance on this basis. School authorities are requested to develop their own school improvement plans using the datasets provided (particularly those related to student learning). However, as described by Brito (2018), such data usually remain with local and school authorities, even when made public either by central authorities (via the internet) or school authorities (on a public board). They usually do not reach end users, with the exception of those participating in SMCs, due to a lack of participatory approaches.

1. What is meant by open school data?

Figure 1. Major actors and steps involved in the management approach

Note: The arrows show flows of information. The numbers indicate the chronology of transmission.

BOX 7

Illustration of the management-oriented approach: PMIU in Pakistan

One of the most significant steps taken by the provincial government in improving accountability and transparency in the education landscape was the development of the Programme Monitoring and Implementation Unit (PMIU). This open data initiative publishes online the monthly performance of almost 53,000 public schools in Punjab across specific educational indicators (e.g. student attendance, teacher presence, and school facilities). The collected information is evaluated by pre-district committees, district review committees, and CEO [chief executive officer] conferences every month in order to monitor progress and identify where further work is needed. Stocktaking meetings held with the chief minister every two months ensure that each district is answerable for its performance; top performers are praised and poor performers are subject to sanctions.

Source: Khan, 2018.

1. What is meant by open school data?

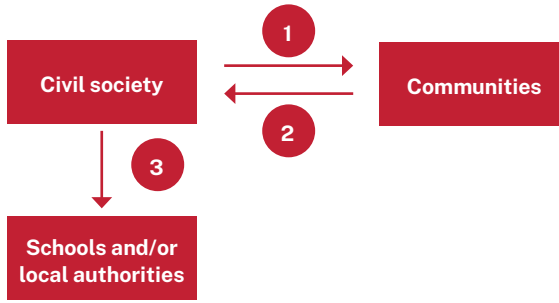
Participation-oriented approach

Usually initiated by civil society organizations, **participation-oriented approaches** aim to increase the engagement and empowerment of communities by giving them access to school data. The idea is to encourage them to act upon this information by voicing their concerns, and in some cases employing social monitoring to hold schools and/or local authorities accountable.

Participation-oriented approaches are often designed by civil society organizations in contexts of poor service delivery at school level, and pervasive corrupt practices (e.g. collection of illegal fees, high rates of teacher absenteeism). They aim to open short routes of accountability within the educational system by instituting direct feedback mechanisms between users and front-line providers. The data shared with users can be extracted from existing EMIS systems, but also produced by communities themselves. The idea is to share these data with all school stakeholders to enable discussion and monitoring of school results, to detect bottlenecks and possible malpractice, and to facilitate demands for better education services on this basis. It is expected that community mobilization and civic monitoring will lead schools and local public authorities to address shortcomings, with consequent improvements in school performance.

1. What is meant by open school data?

Figure 2. Major steps involved in the participation approach



BOX 8

Illustration of the participation-oriented approach: TIB school report cards in Bangladesh

Transparency International Bangladesh (TIB) initially provided education-related information to people through an advice and information centre set up through a Committee of Concerned Citizens. Then, in 2004, TIB launched information-dissemination activities in selected primary schools through parent and mother gatherings, advice and information desks, information boards, and leaflets, in order to create awareness among parents and the wider community about educational issues. In 2006, TIB conducted a Citizen Report Card Survey in selected primary schools and shared the findings with school-level stakeholders, including parents, the SMC, the media, and school authorities.

Source: Roy and Miah, 2018.

1. What is meant by open school data?

Mixed approaches

Initiated by public authorities, **mixed approaches** combine the management-oriented approach, described above, with specific measures aimed at generating community participation and involvement at school level.

Mixed approaches are quite similar to management-oriented approaches, insofar as they are developed by public authorities with a view to improving school performance by allowing for better monitoring of their results. However, mixed approaches also draw lessons from the limited impact of management-oriented approaches due to lack of empowerment of school actors, and instead build on the experience of participation-oriented approaches by introducing community participation mechanisms at school level. In other terms, open school data are used by local public authorities to monitor school results and encourage better school planning, but they are also used to collect community feedback and create mobilization at the school level. However, the capacity of education authorities to foster user engagement may not be as strong as seen in participation-oriented approaches facilitated by civil society actors.

1. What is meant by open school data?

Figure 3. Major steps involved in the mixed approach

BOX 9

Illustration of a mixed approach: School report cards in Ghana

Several initiatives take a mixed approach by seeking to combine improved management with community participation. For example, the *School Report Card Implementation Manual* in Ghana highlights two main uses of the tool. At the district level, it is used to improve reporting to the central ministry, while at the school level, where school report cards are discussed at the school performance appraisal meeting, it is used to draw up a school performance improvement plan. This school review is designed to help the school and key stakeholders in the community, with a strong interest in the school's welfare, take note of performance and identify strengths and successes, together with areas for improvement.

Source: Dupain and Thu Phuong Nguyen, 2019.

1. What is meant by open school data?

Table 3 summarizes the motivations, major aims, audience, and promoters of those three approaches.

Table 3. Comparison of the management, participation, and mixed approaches

Approach	Motivation	Aims	Audience	Promoters
Management-oriented approach (top-down feedback)	Decentralization Results-based management Pressure from learning assessments	Support school planning Improve educational quality Increase school performance Sanction and reward	Local authorities School authorities SMCs	Ministry of Education
Participation-oriented approach (bottom-up feedback)	Short route of accountability (direct feedback mechanisms) Civic monitoring and social accountability	Allow communities to monitor and discuss school results Support demand for better education services Hold schools and public authorities accountable	Parents and communities School authorities Local authorities	Civil society organizations
Mixed approach	Combination of the above	Combination of the above	Combination of the above	Ministry of Education

1.4. Considering differences between regions

Open school data initiatives have flourished in all regions of the world. Some date back to the 1990s, such as the Virginia School Report Card introduced in the state of Virginia (United States) in 1997. *Appendix 1* lists selected initiatives scrutinized as part of IIEP-UNESCO's research, led by government authorities as well as civil society organizations. The following sub-sections highlight regional differences.

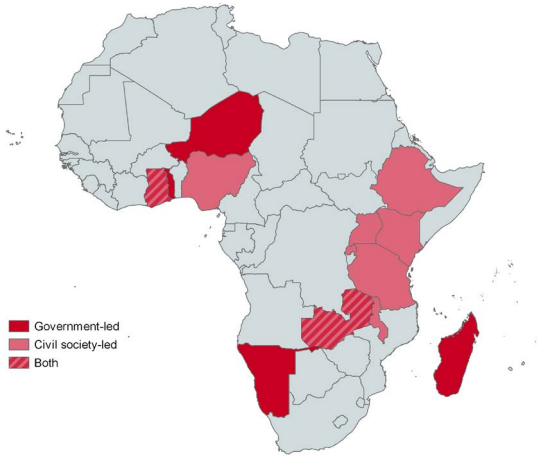
Focus on Africa

Map 2 shows selected African countries where open school data initiatives have been developed since the early 2000s. In all the projects under review, international partners played a key role. Government-led initiatives were introduced at the initiative of development partners (e.g. Agence française de développement [AFD], United Nations Children's Fund [UNICEF], US Agency for International Development [USAID], World Bank [WB]), involving international funding and often outside operators, while civil society programmes were run by international or national non-governmental organizations (NGOs) using international funding (e.g. Link).

Dupain and Thu Phuong Nguyen (2019) state that the first recorded programme was initiated in 2000 in Namibia, as part of the Basic Education Support project funded by USAID. They analyse how the management-oriented approach was encouraged in other countries in the region in the following years: 'The management-oriented approach grew out of development of sectoral approaches and associated funding. These "results-based" approaches amplified the need for information to measure outcomes. At the same time, the

1. What is meant by open school data?

Map 2. Selected open school data initiatives in Africa



Note: The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. The final status of the Abyei area is not yet determined.
Source: IIEP based in UN Cartographic Division.

prospect of significant funding being injected into education systems through the Fast-Track Initiative made efficient resource management more of a concern.' It led to the launch of the Improving Education Management in African Countries (AGEPA) programme in five African countries in 2003, under which school report cards were designed at the central level by education ministry officials, with technical support received from international partners. In the case of Madagascar, a first attempt was made to present results in a more accessible way, so as to encourage community involvement. Building on the same premises, Data Must Speak, a new programme co-funded by the Global Partnership for Education (GPE), the Hewlett Foundation, and UNICEF, was initiated in 2014 in Madagascar, Togo, and Zambia.

1. What is meant by open school data?

During the same period, a wide variety of community scorecard experiments relying on citizen participation were carried out in countries such as Ethiopia, Gambia, Ghana, Malawi, Rwanda, Tanzania, and Uganda. They were usually smaller in size – ranging from coverage of 10 schools (the initiative led by Transparency International [TI] Rwanda) up to 340 schools (the Link Community Development Malawi project). Those types of initiative also benefited from development assistance by partners and technical support. Dupain and Thu Phuong Nguyen (2019) emphasize that 'their durability seems on the whole to be limited, with very little formalization (even partial)'.

Focus on Asia

Major open school data initiatives have spread widely in Asia over the last two decades. Federal governments of highly populated countries began sharing school data extracted from their EMIS systems as early as 2005 in the case of India, followed by Bangladesh in 2010, and Indonesia in 2015. In the case of Indonesia, for instance, *Sekolah Kita* ('Our School') was developed by the Centre for Data and Statistics of Education and Culture, which forms part of the Ministry of Education and Culture. It displays data on 215,697 schools, including kindergartens, primary schools, lower secondary schools, and upper secondary schools (Felicia, 2018). The Philippines and Australia followed a similar path in 2009 and 2010 respectively. In all these countries, open school data were institutionalized at the country level by central public authorities.

1. What is meant by open school data?

Map 3. Selected open school data initiatives in Asia

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.
Source: IIEP based in UN Cartographic Division.

Over the same period, civil society organizations were also very active in developing community or citizen report cards, through the use of participatory approaches. Transparency International Bangladesh (TIB) was among the first to develop a methodology to design school report cards in 105 government, 40 non-government, 14 satellite, and 12 community primary schools spread over eight *Upazilas*[5] (Karim, Santizo Rodall, and Cabrero Mendoza, 2004). Transparency

5 I.e. districts.

1. What is meant by open school data?

International Indonesia (TII) developed a similar approach under *Cek Sekolahku*. And the Affiliated Network for Social Accountability (ANSA) started CheckMySchool (CMS) in the Philippines in 2010. In all those cases, school report cards were designed as key tools to improve transparency, hold schools accountable for the service provided, and fight against corrupt practices.

Focus on Latin America

In Latin America, government authorities in Brazil, Colombia, Guatemala, Mexico, and Peru have taken the lead in sharing school data with the general public, placing an emphasis on student results. Brito (2019) explains this situation in terms of the development of 'a strong culture of evaluation to improve the quality of education', which has led most countries in the region to design standardized assessment instruments to measure student learning outcomes. She also highlights the difficulties encountered in those countries with reconciling data produced by a variety of public agencies, each of which operates using a different logic and adopting a specific format, making it difficult to use and compare data over time.

This centralized approach to open school data has opened up the space for a few civil society organizations to propose more participatory models to share school information and involve communities. This is the case of the project *Mejora tu Escuela* in Mexico, which relies on an online platform, with the possibility for parents to provide comments or make complaints. Another such example is found in Peru, with Edu-Q card, which helps communities to identify weaknesses and formulate a plan of improvement to address them.

1. What is meant by open school data?

Map 4. Selected open school data initiatives in Latin America

Source: IIEP based in UN Cartographic Division.

2. How to choose the content and format for open school data

2.1. Selecting the data to be shared with the public

The number and types of information published under open school data initiatives can vary significantly. Both tend to become more comprehensive over time, starting with data on school inputs and thereafter encompassing data on school processes and school outputs. Data usually belong to one of six categories:

— school profile;
— funding;
— condition of services;
— school governance and operation;
— efficiency and performance;
— parent and pupil satisfaction.

School profile

Open school data consist of background information about each school, starting with the name and sometimes the physical address. *Sekolah Kita* (Indonesia) goes further, displaying geospatial information, including educational and cultural sites around the school. Other basic criteria characterizing the school can also be included (e.g. urban/rural, public/private, accreditation status, or language of instruction). Enrolment figures are almost always shared (e.g. number

School profile

- School location
- Public/private status
- Accreditation
- Enrolment
- Special education
- Language of instruction
- Health and nutritional status
- School news

of boys and girls enrolled), and in a few cases specific data is shared on pupils' socio-economic profiles and the number of pupils with special needs (Guatemala).

Funding

Funding

- School budget
- Parental contributions
- Other sources of income
- Donations
- Stipends

Financial data are found in about half of the initiatives documented through IIEP-UNESCO's research. In the case of *My School* in Australia, information about 'the school's recurrent and other income (Australian and state governments' recurrent funding, fees, charges, parental contributions, and other private sources of income) together with its capital expenditure per calendar year' (Rabinowitz, 2018) is provided for each school. Transparency boards (TBs) published in Filipino schools at the request of the Department of Education provide the most detailed information about funding issues (i.e. cash disbursements and advances, cheque numbers, payee particulars, payments for travel expenses, training, office supplies and repairs, and maintenance of school buildings).

Information about the financial contributions of parents is also provided in a few cases – not on the amount collected, but rather the amount expected for different services. For example, the school report cards developed under the aegis of Transparency International Bangladesh (TIB) specify which school services are free and which are subject to payment, so as to ensure that parents know which fees they are (and are not) required to pay (Roy and Miah, 2018). In the same vein,

amounts and eligibility criteria for stipends are made accessible under the Programme Monitoring and Implementation Unit (PMIU) project in Pakistan.

Condition of services

Open school data initiatives also provide a number of indicators related to the condition of services, in particular the number of teachers (sometimes disaggregated by gender) and their qualifications. Information about facilities, equipment, and/or materials is also usually included, in the form of a list of amenities accessible in the school (e.g. water, electricity, internet), or of the number of available items (e.g. textbooks). The quality of infrastructure or equipment is sometimes specified (e.g. classrooms in good condition, partially damaged, or damaged).

Condition of services

- Number of teachers
- Qualification of teachers
- Availability of facilities, equipment, and materials
- Condition of facilities, equipment, and materials
- School safety

A few initiatives also incorporate data related to school safety. This is the case of the school report card in the state of Virginia, United States, which lists 'the number of offences by category (e.g. weapons offences, offences against student or staff, and property offences) for the last three years' (Cheng and Moses, 2016), as well as the school report cards developed under the PMIU project in Punjab, Pakistan, which include information about the presence of boundary walls around schools.

2. How to choose the content and format for open school data

School governance and operation

Data related to school governance and operation can include factual information about the existence of a school management committee (SMC), the responsibilities of SMC members, and the status of the school plan or of school projects. They can also provide quantitative information on the number of meetings held by the SMC, or the number of administrative or inspection visits.

School governance and operation

- Governance structure
- Inspection
- SMC meetings
- School projects
- Community participation

Efficiency and performance

Open school data also usually include indicators that illustrate the efficiency of the system (e.g. promotion, repetition, completion, retention, and dropout rates). A few initiatives include data on student attendance, while two among those reviewed recorded teacher presence – namely, the school report card developed under the PMIU project in Punjab, Pakistan,[6] and the

Efficiency and performance

- Promotion/repetition/completion/retention/dropout rate
- Pupil attendance
- Teacher presence
- Student learning outcomes
- School awards

6 The PMIU school report card measures the physical presence of teachers (headcount) on the day of the monitoring and evaluation assistant's visit across all filled teacher posts. Teachers on leave are counted as not present (Khan, 2018).

2. How to choose the content and format for open school data

School Report Cards project in Ghana. Finally, school performance was measured in under half of the initiatives reviewed using indicators such as the passing rate for the primary education certificate (Bangladesh), pupil results on national examination tests in literacy and numeracy (Australia), or school awards (Indonesia).

Parent and pupil satisfaction

Parent and pupil satisfaction

- Parent and pupil satisfaction
- Complaints

Finally, a few initiatives take into consideration parent satisfaction with the services provided by the school, measured through user surveys. The dimensions assessed can vary according to the needs expressed. In order to calibrate participants' rating of subjective aspects properly, guidance needs to be provided. Under the National Taxpayers Association's (NTA) project in Kenya, for instance, 'parents are presented with an ideal situation, a disastrous one, and an intermediate one for each issue concerned; in each case the facilitators are invited to get the group to reach agreement on a score' (Dupain and Thu Phuong Nguyen, 2019).

In other cases, complaints submitted by students and parents to schools are publicly displayed, along with a record of whether they received a response. This is the case in the *Cek Sekolahku* project developed by Transparency International Indonesia (TII),[7] and the *Mejora tu Escuela* online platform in Mexico.[8]

7 See http://ceksekolahku.or.id
8 See www.mejoratuescuela.org

2. How to choose the content and format for open school data

Table 4 summarizes the main categories of publicized school data and provides a few illustrative examples.

Table 4. Main categories of publicized school data

Domains	Categories of data	Specific examples
School profile	School location (urban/rural) Public/private (status) Accreditation Enrolment figures Special education information Language of instruction Health and nutritional status School news	Local map Distance to cultural heritage sites Number of boys/girls enrolled Socio-economic profiles of pupils Number of pupils with special needs
Funding	School budget Parental contributions Other sources of income Donations Stipends	Amount of the grant received Capital expenditure Budget for the canteen fund Specification of free/paid services (fees, school meals, etc.) Amounts and eligibility criteria for stipends
Condition of services	Number of teachers Qualification of teachers Availability of facilities, equipment, and materials Condition of facilities, equipment, and materials School safety	Number of certified teachers Condition of classrooms (damaged, partly damaged, good) Number of toilets Number of textbooks Availability of drinking water/ electricity Dangerous buildings Internet access Boundary walls Number of offences

2. How to choose the content and format for open school data

Domains	Categories of data	Specific examples
School governance and operation	Governance structure Inspection School projects Community participation	Existence of SMC Responsibilities of SMC members Number of meetings held by SMC Number of administration/ inspection visits Status of the school plan Community support for teaching and learning
Efficiency and performance	Promotion/repetition/ completion/ retention/ dropout rate Pupil attendance Teacher presence Student learning outcomes School awards	Student attendance data by sub-groups Student test results per cohort Participation of students in vocational and training courses Exam pass rates
Parent and pupil satisfaction	Parent and pupil satisfaction Complaints	Pupils' satisfaction score Number of complaints received Number of complaints dealt with

Lessons for planners

- Select background information for the school profile.
- Consider data about school inputs, processes, and outcomes.
- Be selective regarding the amount of data for display.
- Ensure proper disaggregation of data, while protecting data anonymization.

2. How to choose the content and format for open school data

2.2. Mobilizing various sources of data

Relying on EMIS data

Open school data originate primarily from existing educational management and information systems (EMIS). They build on the strength of a long-established data collection system applied countrywide, backed up by public administration and resources. This is the case for government-led and some civil society-led initiatives alike. In Bangladesh, the school data published under the Bangladesh Bureau of Educational Information and Statistics (BANBEIS) website are collected as part of the Annual Primary School Census conducted every year by the Directorate of Primary Education (DPE). A structured form is sent to all schools for completion, and the information is then compiled by the DPE. Similarly, in Indonesia the principal source of information displayed on the *Sekolah Kita* website is *Dapodik*, the Indonesian EMIS managed by the Ministry of Education and Culture.

In a number of cases, open school data initiatives integrate data from other official sources. This is the case, in particular, for national examination results collected from public examination agencies, but also for more specific data, such as school accreditation status, or lists of cultural heritage sites around schools obtained from other national agencies, as is the case for *Sekolah Kita* in Indonesia.[9] In the event of multiple sources of information, governments need to establish a national protocol with all interested parties regarding the datasets to be displayed. In Australia, for instance, 'authority

9 See http://dapodik.data.kemdikbud.go.id

2. How to choose the content and format for open school data

for determining the nature of the data sets and any further development of *My School* rests with the Australian education ministers through the Education Council. While there has been some opposition to the inclusion of some data sets from particular groups at different times, agreement has been obtained through negotiation' (Rabinowitz, 2018).

The process for collecting EMIS data can be quite lengthy and bureaucratic, particularly in large countries composed of multiple administrative layers. In Bangladesh, for instance, school principals and assistant teachers are responsible for completing the forms sent by the DPE in hard copy by May each year. Education officers at district levels, known as *Upazila* Education Officers (UEOs), are responsible for entering information into a database and submitting this information to the DPE. UEOs also make regular visits to schools to cross-check data (Roy and Miah, 2018). The overall process designed by public authorities is very much supply-driven. As a result, the data collected respond primarily to administration needs. Moreover, the process is quite long, which can affect the timeliness of data. To address this second challenge, an increasing number of countries are now digitalizing the entire data collection process, replacing printed forms with mobile applications.

2. How to choose the content and format for open school data

BOX 10

Digitalization and synchronization of data: Learning from the experience of the PMIU in Pakistan

Following the inception of the PMIU in 2005, Monitoring and Evaluation Assistants (MEAs) completed numerous paper-based survey forms to collect data in public schools. Tabulation and standardization of results was a long, arduous process, rendering the system inefficient. In August 2014, the PMIU and the School Education Department ... worked with the PITB [Punjab Information Technology Board] to develop an Android application for efficient data collection. As a result, MEAs can now submit forms digitally using hand-held SIM-enabled tablets, on a real-time basis. This system allows for instant reporting with pictorial evidence, geo-tagging of sites visited, and automatic SMS alerts on below-target performance. Provincial and district-level summaries are generated automatically based on data from forms submitted by the monitoring officers. This measure has helped to reduce data-entry time and has made data acquisition less prone to error through built-in validation checks. Real-time data generate updates to a centralized dashboard that offers access to consolidated information for timely trend analysis and decision-making.

Source: Khan, 2018.

Self-assessment and locally produced data

Several open data initiatives are now placing users at the centre of the data collection process, in recognition of the need for a more demand-driven approach. This is particularly the case for a number of civil society projects that collect

2. How to choose the content and format for open school data

information directly from communities using field surveys. In the case of the Community Score Cards implemented in Rwanda, for instance, teachers, students, parents, and service providers are divided into four groups (with at least eight members per group), and then each group is asked to assess the effectiveness of the school based on a series of set indicators, with moderators overseeing the scoring. Similarly, the Leadership Initiative for Transformation and Empowerment (LITE) in Nigeria conducts focus group interviews at village level to assess the level of satisfaction of young men and women, and older men and women, regarding specific aspects of education service provision, for instance teacher attendance (Cheng and Moses, 2016).

Some projects not only collect data directly from end users but also assist them in conducting their own self-assessments. Under the school-assessment project held in Namibia, for example, each school development committee member is asked to score school management and leadership, teaching and learning, parent and community participation, and outside support on a scale of 1 to 4, before an overall rating is reached through consensus. In the case of Citizen Voice and Action in Uganda,[10] 'both the data sources and content of community scorecards are decided by community members' (Dupain and Thu Phuong Nguyen, 2019). Communities are invited by organizers to identify educational issues of particular importance to them (e.g. teacher attendance, student absenteeism, or provision of school lunches), and to indicate their respective levels of satisfaction.

10 For more details, consult World Vision International's website: www.wvi.org

2. How to choose the content and format for open school data

BOX 11

School self-evaluation: Learning from the experience of EDU-Q Card in Peru

In the case of the EDU-Q Card, data collection is performed directly at the school level, based on a self-assessment exercise supported by external observers provided by the NGO that carried out the pilot project. School inspectors who represent the local educational authority (UGEL) and have been trained in the EDUstars model, support the school in its improvement process, acting as external evaluators and facilitators during analysis of results by the community, and assisting with design and improvement of the school plan. These interventions result in self-assessments conducted by the school community across five areas: the learning environment, teaching approaches, the commitment and skills of teachers, school leadership, and parental involvement.

Source: Brito, 2019.

Focus on school issues

CheckMySchool (CMS) in the Philippines has taken a further step in reflecting user perspectives. The initiative does not use any pre-defined standards, and instead asks communities themselves to determine the specific issues around which they wish to see improvement. Parafina (2018) defines an issue as 'anything that concerns or affects the stakeholders' experience of school services, prompting calls for improvement. Its data interest, so to speak, is issue-driven, need-based, and problem-oriented'. The idea is not to select particular data, but

2. How to choose the content and format for open school data

rather to identify specific problems to be addressed. In other terms, the data need to be actionable. The issues can relate to school building or equipment, student welfare, teachers and personnel, learning materials, or funds. Once an issue has been selected, school and community meetings are held to collect the related data. Third-party volunteers participate in this process and follow up with local education authorities to ensure the issue in question is resolved.

BOX 12

A focus on school stakeholder issues: Learning from the experience of the Philippines

The central government in the Philippines conducts broad-based consultations with stakeholders about information needs. Based on these meetings, it prescribes standard sets of information to be shared about schools. At the start and the end of the school year, school principals meet with stakeholders to discuss the posted information. For CheckMySchool, this process consists of identifying school stakeholder issues, collecting data about the issues, and then facilitating related discussions with various stake-holders, both inside and outside the school. In some sense, the information access model of school report cards and Transparency Board can be said to be top-down, while the model used by CheckMySchool is bottom-up.

Source: Parafina, 2018.

2. How to choose the content and format for open school data

Data reliability checks

The value of open school data initiatives is entirely dependent on the accuracy of the data shared with the public. Mistakes can occur for multiple reasons: misinterpretation of the data collected, errors during the data collection process, misreporting of data on the written form, incorrect entry of figures into the database, and so on. In some cases, such mistakes can be unintentional; in other cases they are made on purpose. Typical examples of the latter include the inflation of enrolment figures to attract more funds, teachers, or equipment for the school; misreporting the condition of facilities to ensure renovation; or inflation of student attendance rates to receive more funds for stipends.

Such problems can be addressed through a variety of approaches, including:

- Limit the number of intermediaries in the data collection process. Data digitalization constitutes an important step forward in this direction.
- Synchronize the new data collected with other sets of data related to the same school and other schools, to facilitate early detection of anomalies.
- Collect data more regularly to facilitate comparisons over time, and within similar timelines for all schools.
- Review rules for the allocation of resources to schools, to make sure that they do not generate incentives to manipulate data (Levacic et al., 2004).
- Run systematic data consistency checks and scrutiny at each administrative level concerned.

2. How to choose the content and format for open school data

- Carry out spot checks to compare the data provided with registers and other documents available at the school level, with the support of independent monitoring agencies (in India, states select 10 per cent of districts and 5 per cent of schools from each block of selected districts for random back-checks).
- Collect data more regularly to facilitate data comparisons over time, and to detect discrepancies accordingly.
- Ask for clarification in case of irregularities, and impose sanctions when explanations are not satisfactory.

In a few cases, data collection is conducted by outsiders to the school. This is the role assigned to about 1,000 monitoring and evaluation assistants (MEAs) under the PMIU project in Pakistan. '[U]nder the supervision of 36 District Monitoring Officers (DMOs), they collect data from Punjab's 54,000 public schools on a monthly basis across the school year (April to March)' (Khan, 2018). However, this approach is costly, and does not circumvent the possibility of collusion between MEAs and school staff. To limit such risks, the PMIU changes the school allocation schedule of MEAs every month.

2. How to choose the content and format for open school data

BOX 13

Verification and validation of data: Learning from the experience of Sekolah Kita in Indonesia

For the Centre for Statistical Data of Education and Culture (PDSPK), verification and validation are very important, and are conducted across several stages involving different actors. The first stage of data verification is synchronization. When a school fails to synchronize its data, the data will need to be revised by the school operator. However, successful synchronization does not ensure accurate school data. PDSPK must apply verification methods as part of a follow-up process intended to detect irregular data and biases.

The *Sekolah Kita* officer provides an example: 'According to the formula, the number of classrooms should be correlated with the number of students. Therefore, it will not make sense if the number of classrooms in the school building is so few and the number of students is so high.' He also pointed out that the system notifies them when suspicious data appear. He highlighted a case where 'all classrooms are broken. All of them, it is hard to believe and we will inform this to the District Office and they can verify it.' When PDSPK detects data with validity and reliability issues, they notify the Directorates General and district leaders.

Source: Felicia, 2018.

2. How to choose the content and format for open school data

Lessons for planners

- Build on the strengths of existing EMIS systems.
- Digitalize the data collection process to reduce irregularities and delays.
- Learn from the experience of civil society organizations to generate data that better respond to front-line user needs.
- Understand the importance of issues that can be selected and addressed with the help of communities.
- Consider different techniques such as data synchronization, data consistency checks, or spot audits for improving data accuracy.

2.3. Favouring relevant data comparisons

From self-comparison to comparisons with standards and other schools

Open school data can be used to take stock of the current status of a given school, but also to check how its situation evolves over time, or to compare it against the national average or standards, and/or with other schools, as detailed below:

- *Comparison of the school with itself.* Open school data can be used to track the progress made by a given school against each of the selected indicators. According to the frequency of data updates, progress can be tracked each month, each semester, or on an annual basis. When consistent indicators are available over a longer period of time, they can be used to make year-to-year comparisons and observe general trends.

2. How to choose the content and format for open school data

— *Comparison of the school with standards.* Some open data initiatives offer the possibility of comparing data on a given school with national standards (e.g. regarding pupil/teacher ratios). Where time series are available, the evolution of student achievement for different subjects can be analysed and compared over time against national standards set by the Ministry of Education.
— *Comparison with other schools.* Open school data can also be compared against the national average, or averaged data for other districts, localities, or schools. For instance, in Madagascar, under the Amélioration de la gestion de l'éducation à Madagascar (Improving Education Management in Madagascar; AGEMAD) project, school results are shown using 'smileys' (outstanding, satisfactory, failing, underperforming). Such comparisons can be misleading, however, if they fail to take into account contextual differences. For this reason, some initiatives limit the number of schools selected for comparison, or limit the schools considered for comparison to those characterized by similar backgrounds.

IIEP-UNESCO's research on open school data in Indonesia

About 90 per cent of parents who were aware of *Sekolah Kita* claimed to use the data available on the website to make comparisons between schools. The majority (52.7 per cent) compared schools against a set of standards, possibly national standards. Others used the data to make year-to-year comparisons (25.3 per cent) and comparisons with schools that shared similar characteristics (18.7 per cent).

Source: Felicia, 2018.

2. How to choose the content and format for open school data

Regarding the latter option, the most advanced way to offer users the possibility of making meaningful comparisons between schools is the Index of Community Socio-Educational Advantage (ICSEA), developed by the Australian Curriculum Assessment and Reporting Authority (ACARA). As described by Rabinowitz (2018), 'ICSEA provides a numerical scale of socio-educational advantage computed for each school. ... The scale is based on a substantial body of research evidence which shows that the educational performance of students, among many other things, is related to certain characteristics of their family and school, such as parental education and occupation and school characteristics such as location and the socio-economic background of the students it serves.' *My School* then allows users to make comparisons between schools based on their ICSEA scores.

BOX 14

Conducting fair school comparisons: Learning from ICSEA

The Index of Community Socio-Educational Advantage (ICSEA) created by ACARA takes account of key factors in students' family backgrounds (parents' occupation, school education, and non-school education) which are known to have an influence on educational outcomes at school. In addition to these student-level factors, school-level factors (geographical location, proportion of Indigenous students) are considered when summarizing educational advantage or disadvantage at the school level. ICSEA provides a scale that represents numerically the relative magnitude of this influence, and takes into account both student- and school-level factors. It thus provides a basis for fair comparisons between schools in which students have comparable levels of educational advantage.

Source: Rabinowitz, 2018.

2. How to choose the content and format for open school data

Scoring based on composite indicators

A few open data initiatives exhibit a preference for providing results (often in graphic form) obtained by each school on one or several composite indicators intended to measure the current situation regarding inputs, performance, and so on. In Niger and Togo, for instance, three major composite indicators are used: a context difficulty index (which takes into account, for instance, the existence of a canteen); an input index (which takes into account the availability of specific human or materials resources); and an output index (which combines indicators related to school performance). Users are able to compare the results obtained by their school on each of those composite indicators against national or local mean values (Dupain and Thu Phuong Nguyen, 2019).

Similarly, under the School Excellence Report in Colombia, each school receives a score for its combined performance against a number of indicators (i.e. school climate, progress, performance, efficiency) on a scale of 1 to 10 (Cheng and Moses, 2016), which can be tracked over time. This type of approach can help to rapidly identify high-performing and low-performing schools in the system, as a tool for local public authorities to take action.

2. How to choose the content and format for open school data

BOX 15

Design of heat maps to track school progress over time in Punjab, Pakistan

The PMIU creates heat maps which divide districts within Punjab into three different shades of green, based on how they meet optimal-performance targets. A performance of 90 per cent and above on any indicator is represented by dark green, 88 to 86 per cent results in a neutral shade of green, while any performance below 86 per cent is shown in light green. A heat map of any month can be obtained by selecting the desired timeframe on the PMIU website. This feature is used regularly by the chief minister and his team to assess the performance of the education system across the province.

Such an approach draws attention to the continued under-performance of schools in the rural south of Punjab, and encourages reform programmes to develop innovative solutions for these target areas. Furthermore, the most recent performance of any school in a northern or southern district, whether rural or urban, can be viewed at the touch of a button. The PMIU automatically organizes each indicator's results for the year against previous years. Users can view the forms submitted by monitoring officers, see how the performance of any district compares to another, and assess progress against education outcomes in Punjab compared to government targets.

Source: Khan, 2018.

2. How to choose the content and format for open school data

Prerequisites for school comparisons

There are two major prerequisites for school comparisons under open school data initiatives: first, the indicators used must be consistent over time, and, second, standardized data must be available across the system. This is not necessarily the case for some data, such as teacher attendance, which are often self-reported, some performance data in the absence of a national curriculum, or uniform standardized tests at country level.

Lessons for planners

- Facilitate the self-comparison of schools over time.
- Maintain to the extent possible consistent indicators over time.
- Provide access only to fair comparisons across schools, taking into account socio-educational differences.
- In the absence of standardized data, avoid using proxies.

2.4. Envisaging a wide range of formats for data presentation

Simplification versus risks of misinterpretation

As open school data can target a variety of stakeholders (e.g. local education authorities, school principals, teachers, SMC members, parents, students, communities), a key challenge for designers is to establish an adequate balance between presenting data in a simple and user-friendly format and limiting the risks of misinterpretation. Rabinowitz (2018)

2. How to choose the content and format for open school data

summarizes this issue in reference to the Australian experience: 'there is a clear tension between displaying data in a form widely understood by users and at the same time minimizing risks associated with the misinterpretation of the data. While there are various requests and suggestions regarding improving the "user-friendliness" of *My School*, the balance needs to favour maintaining technical accuracy over efforts to simplify the presentation of data.'

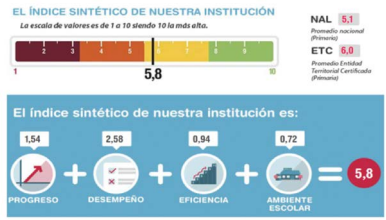
One way to proceed is to produce two types of report card based on the same set of school data: the first targets local and school authorities, which are more familiar with statistics and can use them for planning purposes; the second is aimed at the public at large, and presented in a more accessible format, allowing communities to monitor resources and outcomes at the school level. This model was used for the school report cards of Improving Education Management in African Countries (AGEPA) in Zambia. Two types of school report card were generated, one for local officers and schools, with a focus on particularly vulnerable groups such as orphans, refugees, or pregnant girls, and the second for communities, which featured current information about school inputs and performance using visual aids (Dupain and Thu Phuong Nguyen, 2019).

Civil society organizations have experimented with a wide range of techniques to display data in a user-friendly manner, including in the context of illiterate communities. As students in the Philippines noted, it is important to present data in a clear and simple way, and to pay attention to 'the size of the postings, size of fonts, choice of colours, use of non-technical language, and use of graphics and illustrations' (Parafina, 2018). The students also highlighted the need to incorpor-

2. How to choose the content and format for open school data

ate stories illustrating the benefits of open data. Broadly speaking, it is essential to ensure the data are accompanied by explanations about their meaning, how to interpret them, and how they can be used for school improvement. When displayed online, the system can allow users to access more detailed and technical data, as required.

Visual presentation: the School Excellence Report in Colombia and the Sistema Nacional de Indicadores Educativos[11] (SNIE) in Guatemala



Source: Horacio Alvarez, Inter-American Development Bank, cited in Cheng and Moses, 2016; SNIE website.[12]

Periodic versus real-time publication of data

Very few countries have succeeded in publishing data in real time, due to the need to verify the accuracy of information and clean the data for release. In most cases, data are published only once or twice a year, usually at the beginning and

11 National System of Educational Indicators.
12 http://estadistica.mineduc.gob.gt/

2. How to choose the content and format for open school data

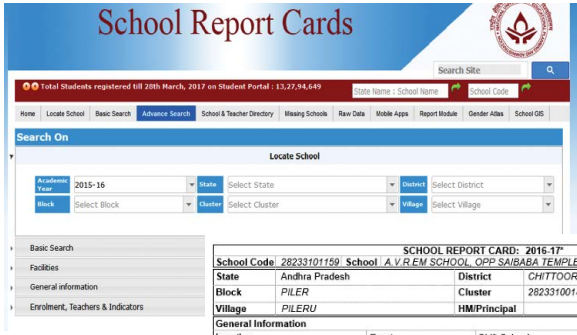
the end of the academic year. However, thanks to the possibilities offered by new technologies, the time between data collection and publication is reducing, and the frequency of data release is increasing, with a gradual move towards near real-time publication. In the case of the PMIU project in Pakistan, for instance, the data collected by MEAs every month are published online in real time, and 'users can subscribe for auto-alerts to get updates on data related to spot visits' (Khan, 2018). This is possible due to the independence of MEAs, who are fully trained and dedicated to this task.

Online versus offline communication channels

In the case of management-oriented approaches (see *Subsection 1.3*), open school data are released online via a virtual platform which tends to grow rapidly over time, covering all the schools in the country. At this scale, such a platform is the most obvious way to share information with a large public. During the initial phase, users can search by localities or school names to access raw data about schools; however, once the system becomes more sophisticated, users may be able to generate tailored reports after selecting specific indicators. A typical example of such a platform is the U-DISE database in India. School report cards are presented on a dedicated website developed by the National Institute of Educational Planning and Administration (NIEPA), and information on each school can be accessed via 14 filters on location (state, district, block, cluster, village), area (urban/rural), school name or code, type of management (e.g. central/local government, private aided/non-aided, madrasa recognized/unrecognized), level, and academic year.

2. How to choose the content and format for open school data

The School Report Cards website developed by NIEPA in India



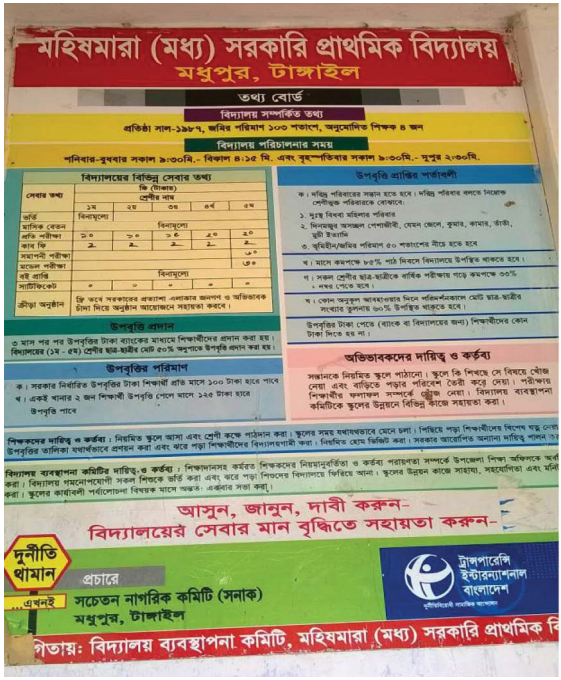
Source: http://schoolreportcards.in

Internet penetration remains limited, though, and public websites are not always user-friendly; thus, public authorities often instruct school authorities to also display school data on public notice boards. In Indonesia, for instance, Law No. 25 Year 2009 on Public Services requires schools to display information openly using banners, boards, or posters. When such instructions are not accompanied by proper monitoring, however, they are not enforced universally, or only partially. In Ghana, for instance, 'the head teacher is supposed to post the [school report card] results openly. However, at present

2. How to choose the content and format for open school data

the majority of [school report cards] are posted only on the wall of the head teacher's office, which greatly limits access to this school-level data' (Cheng and Moses, 2016).

School information board in Bangladesh



Source: Roy and Miah, 2018.

2. How to choose the content and format for open school data

BOX 16

Limits to online databases: The example of PMIU in Punjab, Pakistan

It is interesting to note that PMIU data were not accessed through the website by parents, head teachers, or teachers. This indicates that the government's choice of an online database for the publication of school-specific data might need reconsideration. Furthermore, it is worth noting that smart phones seem to be the key resource for accessing data; however, the usage of these data is dependent on access to phones and the income levels of parents, resulting in higher concentrations in urban areas. Having data available in English has limited its audience, with efforts needed to incorporate more local languages.

Source: Khan, 2018.

Open school data initiatives that employ a participative approach are often more imaginative in the ways that they share information with the public, and more selective in the data they display. They employ a wide variety of formats and channels to communicate information, including colourful posters, banners, factsheets, short brochures, information documents, and so on. They also make sure that the information is displayed in open public spaces where it is easy to see and read (e.g. school entrances, main corridors, official school boards). They encourage reference to school report cards on the school website (if any) or the school newsletter. If resources allow, they can be reproduced for distribution to the general public.

2. How to choose the content and format for open school data

IIEP-UNESCO's research on open school data in Bangladesh

Parents' means of accessing school data (multiple responses)

School monitoring boards	21.6%
Leaflets	78.4%
Parent gatherings	91.2%
Mothers' gatherings	100%

Source: Roy and Miah, 2018.

Passive versus active information campaigns

While information campaigns are important, however, they are not sufficient in themselves to ensure that people access information. Hence the need for active information campaigns that solicit public participation (Read and Atinc, 2017). These can involve reading out loud the content of school report cards during SMC and/or community meetings, and presenting them during special school events (e.g. flag-raising ceremonies in some parts of Indonesia). However, in Bangladesh, 'more than 25 per cent of parents stated that they experienced difficulties in reading the display boards or leaflets due to their poor level of education. Access to school data therefore depended on informative, open, and friendly mothers' gatherings, especially for those with literacy deficiencies' (Roy and Miah, 2018).[13]

13 TIB has long experience in empowering women through the organization of mothers' gatherings, Active Mothers' Fora, and mothers' workshops. It helps them take action and strengthen their role in society accordingly.

2. How to choose the content and format for open school data

> “The question most often encountered first when introducing a [school report card] to a community is, ‘What does this mean?’ The second question is frequently, ‘What can I do about it?’

Source: Cheng and Moses, 2016

As a consequence, there is a need for additional ways to communicate data efficiently, especially in communities characterized by socio-educational disadvantages. These can take the form of mothers’ gatherings during which data are not only shared but explained, and there are interactive discussions to explore ways to act upon this information and improve school results. In Colombia, for instance, the results of school excellence reports are discussed at school level every 25 March, a day designated by the Ministry of Education as a ‘Day of Excellence’. On this day, school principals and teachers are encouraged to discuss school performance and strategies for school improvement, with technical guidance provided (Cheng and Moses, 2016). However, such participation processes are, of course, more costly than simply publishing information. One way to limit costs is to build on existing management and social mechanisms.

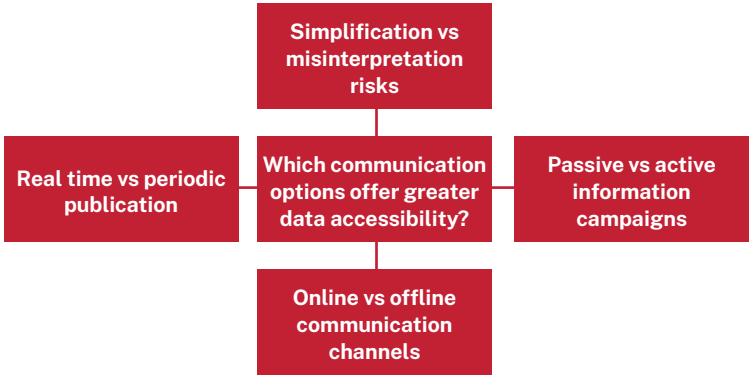
Mothers’ gatherings in Bangladesh

Source: Roy and Miah, 2018.

2. How to choose the content and format for open school data

The various communication options presented above are summarized in *Figure 4*.

Figure 4. Which communication options offer greater data accessibility?



Lessons for planners

- Design one school report card for local and school authorities, and another for users in a more accessible format.
- Use colour codes, non-technical language, and visual elements.
- Use online databases as well as more traditional means to display information (e.g. public noticeboards that are easy to spot).
- Ensure that data are presented and discussed at school meetings, mothers' gatherings, and other special school events.
- Provide necessary resources and support to school authorities to conduct such events, and use existing management and social mechanisms as far as possible.

2. How to choose the content and format for open school data

In summary: Choosing the content and format for open school data

Data content	Data sources	Comparison	Format	Access
School profile Funding Condition of services School governance and operation Efficiency and performance Parent and pupil satisfaction Community-devised issues	EMIS Government policies, orders, rules, etc. Standardized tests Other official data Survey and focus group Community observation and perception	School with itself over time Similar schools Schools in the same district Local mean value National mean value National standards Standards decided by communities	Paper or electronic school card (one-page summary of indicators)	Online database School website Electronic mail School public noticeboard School management meetings Parent gatherings Mothers' gatherings Special school events School journal

3. How to plan for equal access to and efficient use of open school data

3.1. Who needs open school data and for what purposes?

Key questions for planners

- What categories of stakeholder will benefit from the release of open school data?
- For what reasons will the various stakeholders be accessing the data?
- How will different stakeholders make use of the data?

Once school data are released, in theory they can be accessed and used by everyone in society. However, in reality, when managed by central education authorities, the content and format of open school data tend to follow the educational management information systems (EMIS) from which they come, and thus respond to the needs of planners and managers rather than parents or communities. Brito (2019) argues that in Latin America, open school data target mostly decision-makers and the administrators of large-scale education systems and researchers, as 'their level of complexity requires technological knowledge to access them, as well as some expertise to understand and make sense of them'. In other words, sharing information with the general public comes as an afterthought.

Yet the value of open school data lies in the fact that data are shared with a broader set of actors. While central, local, and school authorities may be used to accessing school data, they are rarely accessed by teachers, parents, students, and

3. How to plan for equal access to and efficient use of open school data

communities, with the possible exception of those who participate in school management committees (SMCs). Each of these parties may have different motivations for accessing and making use of data (e.g. to remain informed, to pilot changes at local or school level, to collect feedback from users, to hold other actors accountable for their actions, to share stories, and to conduct analytical work). Each of those reasons needs to be unpacked carefully in order to respond to the question: who needs data and for what purposes?

When launching an open school data initiative, the priority should be to get primary stakeholders to use data. In this context, it is useful to establish a distinction between primary stakeholders (i.e. teachers, parents, students, and communities); secondary stakeholders (i.e. education and school authorities, including SMCs, and civil society, whose interest is conditioned by the feedback or actions taken by primary stakeholders based on the information provided); and tertiary stakeholders (i.e. media, researchers, and donors). The generic functions and/or purposes of the information for those different stakeholders can be categorized as: planning, reporting, becoming informed about the status of facilities and services, raising awareness about problems, holding actors accountable, monitoring, advocacy, sharing stories, and conducting analytical work.

> “My School data has become critical in enabling us to better match supporters and schools facing disadvantage. We have built an interactive map, allowing people to determine which schools they can support in a particular region.

A donor in Australia (Rabinowitz, 2018)

3. How to plan for equal access to and efficient use of open school data

Table 5. Mapping data beneficiaries and reviewing their possible motivations

Data beneficiaries	Are the data new to them?	For what purposes might they use open school data?	
Central education authorities	No	Planning	
Local education authorities	No	Planning, monitoring, accountability	
School authorities	No	Planning, reporting	
Teachers	Often	Reporting, information, awareness, accountability	
Parents	Yes	Information, monitoring, awareness, accountability	
Students	Yes		
Communities	Yes		
Civil society	Yes	Monitoring, accountability, advocacy	
Media	Yes	Sharing stories	
Researchers	Sometimes	Data analysis	
Donors	Sometimes	Planning	

■ Primary stakeholder ■ Secondary stakeholder ■ Tertiary stakeholder

3. How to plan for equal access to and efficient use of open school data

BOX 17

Stakeholder interest in the publication of school data in the Philippines

For school heads, the interviews revealed that the relevance of [school report card] information was not so much a matter of interest, but rather one of performance and reporting requirements. For teacher association officials, the data were relevant to gauge school performance and help them fulfil their responsibility to inform parents and the public about the school's condition. For PTA [parent-teacher association] officers, the information was relevant because they 'want to know the status of the school: is it improving, are our children studying well and safe, are we following standards?' ... Student leaders, meanwhile, perceived the relevance of information in terms of their aspirations to help 'raise awareness' and 'make issues and problems visible'.

Source: Parafina, 2018.

3. How to plan for equal access to and efficient use of open school data

Table 6. Data beneficiaries and identified purposes of information

Data beneficiaries	Identified purposes of information
Education authorities	Identify school performance above or below set standards Target resources to schools requiring extra support Promote policies for improving results Support the formulation of school improvement plans Assess the impact of new policies or measures Provide an overview of a particular school
School authorities	Provide an overview of their school Make requests for annual budgets and extra support Monitor school results over time and in comparison with standards or other schools Report school indicators to parents, students, and the community Collect feedback from parents, students, and the community Formulate a school improvement plan or strategy
Teachers	Acquire knowledge of the status of their school and its performance Request better educational conditions Report school indicators to parents, students, and the community Collect feedback from parents, students, and the community Discuss strategies to support learning Contribute to the formulation of a school improvement plan or strategy

3. How to plan for equal access to and efficient use of open school data

Data beneficiaries	Identified purposes of information
Parents	Acquire knowledge about the status of their school and its performance Compare data with other schools for the purpose of school choice Provide feedback on their school Request better educational conditions Discuss strategies to support learning Contribute to the formulation of a school improvement plan or strategy
Students	Acquire knowledge about the status of their school and its performance Provide feedback on their school Request better educational conditions Discuss strategies to support learning
Communities	Acquire knowledge about the status of their school and its results Provide feedback on their school Request better educational conditions Discuss strategies to support learning Contribute to the formulation of a school improvement plan or strategy
Civil society	Conduct advocacy work
Media	Collect publishable materials and share stories
Researchers	Review trends, analyse the impact of specific measures and reforms, make comparisons between schools, document the experience of over/underperforming schools
Donors	Identify schools that require extra support

3. How to plan for equal access to and efficient use of open school data

IIEP-UNESCO's research on open school data in Australia

The majority of school actors (69.05 per cent) confirmed that their main purpose in using the site was to monitor their own school's performance. A third of school actors indicated that they used the *My School* data for planning, and around 40 per cent cited its use for providing information to parents and the community, particularly through newsletters and school annual reports.

Source: Rabinowitz, 2018.

It is important to note the specific situation of teachers within this framework. Teachers are indeed not only responsible most of the time for reporting data to parents and communities, they are also direct users of information. The existence of open school data allows them to access information that formerly fell under the purview of school authorities. They can use it to participate in debates on school improvement and request better educational conditions. Roy and Miah (2018) note that in Bangladesh 'many teachers were happy with the Transparency Board and supported it because they saw it as a breath of fresh air in the context of the usual administration of schools. The simple act of putting the information board outside the office of the principal meant a lot'. Parafina (2018) also emphasizes the interest of teachers in open school data in the Philippines compared with other stakeholders.

3. How to plan for equal access to and efficient use of open school data

> “I believe that we need to understand school data, not only outsiders, but we, as insiders of this school, need to understand and use data more effectively.
>
> A teacher in Indonesia (Felicia, 2018)

IIEP-UNESCO’s research on open school data in the Philippines

Stakeholder assessments of the importance of publishing school data

Philippines	Parents	Teachers	Community leaders
Very important	89.8	93.1	100
Important	9.8	6.9	0
Not so important	0.4	0	0
Not important at all	0	0	0

Source: Parafina, 2018.

Lessons for planners

- Give priority to primary stakeholders targeted by open school data, namely teachers, parents, students, and communities.
- Review and categorize the main reasons why each of these stakeholders accesses and uses information.
- Consider the particular case of teachers, who are responsible for reporting data to parents and communities but are also users of this information.

3. How to plan for equal access to and efficient use of open school data

3.2. Prioritizing the most relevant data for users

Key questions for planners

- What data are regarded by users as most relevant and useful?
- Are the published data easy to understand?
- How can demand for information be stimulated among a broad public?

Planning open school data requires identifying from the outset which data are most relevant and useful to teachers, parents, students, and communities. Management-oriented approaches, in contrast to participation-oriented approaches, often lack this perspective. Lack of consideration for data needs may well explain the mixed views of parents regarding the importance of data in the cases of Australia and Pakistan, where management-oriented approaches prevail, compared to Indonesia and the Philippines, where both government and civil society initiatives entail the engagement of parents and communities (see *Table 7*).

Table 7. Parents' assessment of the importance of publishing school data in Australia, Indonesia, Pakistan, and the Philippines

	Australia %	Indonesia %	Pakistan %	Philippines %
Very useful	5.1	66.1	26.0	89.76
Quite useful	10.3	32.9	27.0	9.83
Not very useful	20.5	1.0	35.0	0.43
Not useful at all	18.0	0.0	12.0	0.0

Source: Field survey data collected as part of IIEP-UNESCO's research on open school data in Australia, Indonesia, Pakistan, and the Philippines.

3. How to plan for equal access to and efficient use of open school data

In fact, among the six categories of data that can be included in open school data,[14] only half appear to be of particular interest for teachers, parents, students, and communities: efficiency and performance, condition of services, and funding. Indicators seen as most useful are those that reflect concrete issues of direct relevance to them (e.g. student attendance, school facilities, and textbooks), while other indicators, such as student socio-economic profile, repetition, dropout and promotion rates, school inspection, and community involvement, are perceived as responding more to the administration's needs. School safety is also listed by parents as crucial (see *Table 8*). Some variations can be observed among socio-economic groups.

> "The concerns of teachers and students reflect the worlds in which they live, which is why they focus on indicators that concern activities that they witness or deal with personally on a daily basis, such as textbooks or attendance.
>
> *Source:* Khan, 2018

14 School profile; funding; condition of services; school governance and operation; efficiency and performance; and parent and pupil satisfaction.

3. How to plan for equal access to and efficient use of open school data

Table 8. Percentage of parents who declared open school data to be 'most useful'

Type of data	Bangladesh %	India %	Indonesia %	Pakistan %	Philippines %
Number of students	73	77	60	39	85
Student socio-economic profile	NA	39	37	7	50
Student attendance	77	84	78	86	93
Repetition, dropout, promotion	NA	56	42	30	49
Number of teachers	85	87	69	59	89
Teacher attendance	86	89	67	29	92
Teacher qualification	NA	74	73	23	94
School income	NA	77	57	10	85
School facilities	88	84	83	90	91
School equipment	NA	NA	85	57	90
Textbooks	82	84	85	36	87
Student test scores	89	84	83	60	68
School inspection	NA	60	49	28	87
Community involvement	63	NA	47	19	91
Parental satisfaction	NA	NA	66	NA	87
School safety	86	83	84	55	97

NA: Not applicable.
Source: Field survey data collected as part of IIEP-UNESCO's research on open school data in Bangladesh, India, Indonesia, Pakistan, and the Philippines.

3. How to plan for equal access to and efficient use of open school data

IIEP-UNESCO's research on open school data in Bangladesh

Field data indicate a difference between the perceptions of parents in rural and urban areas. Wealthier groups of parents (who are predominantly urban) are more concerned about school facilities, textbooks, the school grade, exam results, community services, security, and services available at schools. The poorer groups of parents (who live predominantly in rural areas) are more interested in information on student attendance, teacher numbers and attendance, the passing rate in the PEC [Primary Education Certificate] exam, stipends, and so on.

Source: Roy and Miah, 2018.

Focus on student learning

Referring to field data, Roy and Miah (2018) note that 'most parental expectations are limited to obtaining their children's exam results and accessing services for their children to which they are entitled'. Similarly, Felicia (2018) indicates that in Indonesia, 'parents tend to be more interested in data closely related to teaching and learning'. In the Indian context where pupils' results are not included in school report cards, parents indicated an interest in proxies that can help monitor learning, such as dropout or transition rates. Finally, Khan (2018) explains that in Punjab, Pakistan, parents of children who have already repeated a year or enrolled late are likely to be interested in promotion, retention, and dropout rates, while parents of children with good results are more likely to focus on exam performance.

3. How to plan for equal access to and efficient use of open school data

Focus on the learning environment

School facilities, equipment, and textbooks are rated highly in terms of importance by teachers, parents, students, and communities. In the Indian context, for instance, this includes data about the availability of midday meals, drinking water, and electricity supply, separate toilets for boys and girls, and playgrounds. More specifically, data about school facilities and textbooks are seen as particularly relevant for tracking a school's financial resources and fighting corrupt practices (e.g. by 87 per cent of parents of children in TIB intervention schools in Bangladesh) (Roy and Miah, 2018).

Focus on parental financial contributions

In most surveyed countries, information about school budgets falls under the responsibility of the administration. Yet in some places parents expressed an interest in accessing information about stipends and exam fees (Bangladesh), or funds that they themselves provide to the school (Philippines); in other words, financial information reflecting their own contributions.

Focus on children's well-being

Data related to children's safety, such as the existence of secure boundary walls (India), teachers' behaviour, complaints of bullying (Philippines), number of offences by category (e.g. weapons, offences against student or staff) (Virginia, United States) are also important considerations for parents and pupils.

3. How to plan for equal access to and efficient use of open school data

Lessons for planners

— Consult users' representatives (e.g. teacher unions, parent representatives, student unions, community leaders) about the data they want to prioritize.

— Select data accordingly, with a focus on information that is 'issue oriented'.

— Organize surveys to adjust the set of data on a regular basis according to evolving needs.

3.3. Ensuring equal access for all to data

Key questions for planners

— Is the presentation of data (use of symbols, graphs, simple indicators, etc.) clear?

— What are the optimal means to ensure accessibility to data?

— What is the best way to ensure that all users can access data equally?

If not planned properly, open school data may well lead to an access gap, with literate and well-connected populations being their main beneficiaries, while populations with low literacy rates and limited access to the internet are largely excluded. In practice, open school data approaches that rely on online platforms, such as the Unified District Information System for Education (U-DISE) in India or the Programme Monitoring and Implementation Unit (PMIU) in Pakistan,

3. How to plan for equal access to and efficient use of open school data

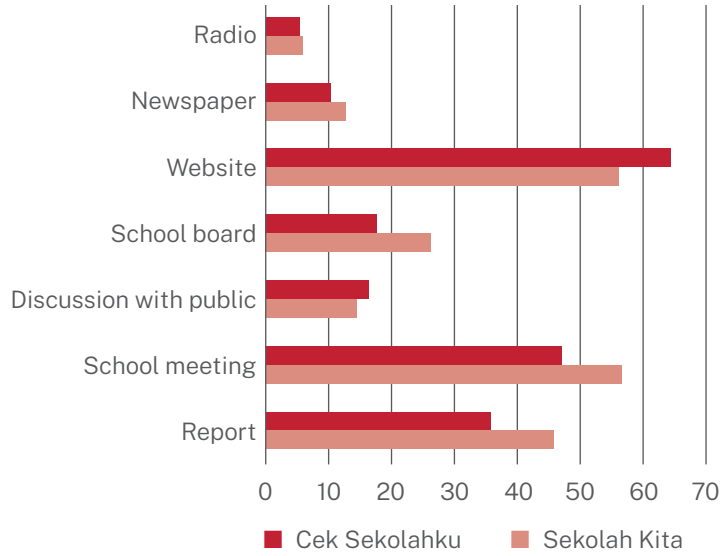
face huge problems of accessibility, although the problems often extend across socio-economic barriers, with around 90 per cent of all parents stating that they were unaware of U-DISE school report cards in India. However, when 'dissemination takes place offline and through face-to-face interaction', according to Parafina (2018), 'no inequity in access [is] found'. Similarly, the often assumed access gap between urban and rural populations is not always corroborated by facts.

> "In rural areas, many parents have limited access to technology [and] feel that they do not have the capacity to participate in school … Parents in urban areas tend to be busy, they don't have time to visit their children's schools and attend meetings. Participation is a problem in all schools.
>
> A Transparency International Indonesia (TII) officer (Felicia, 2018)

Limiting inequity, however, entails a number of proactive measures. First, the publication of data at school level must be made compulsory by law, with penalties specified in case of non-compliance. Without these safeguards, there is a strong risk that data, or at least some data, will not be shared with the public, or shared only for a very limited period of time. Second, data need to be distributed in attractive formats (using simple terms, infographics, etc.), presented in a way to encourage engagement among the target audiences, and placed in strategic locations that are easily accessible. Third, sharing of information must be conducted through a combination of online and offline communication channels (e.g. websites, posting on school boards, school meetings, mothers' gatherings, published reports, leaflets, posters).

3. How to plan for equal access to and efficient use of open school data

Figure 5. Means used by parents to access Cek Sekolahku and Sekolah Kita in Indonesia



Source: Felicia, 2018.
Note: Cek Sekholahku has been developed by Transparency International Indonesia, while Sekola Kita is a government led-initiative.

Particular emphasis needs to be placed on interactive face-to-face meetings as the preferred means for accessing school data. This was backed up by 94.5 per cent of parents in the case of Department of Education school report cards in the Philippines, 89.7 per cent of teachers, and 88.9 per cent of community leaders (Parafina, 2018). Where literacy barriers are a factor during such meetings, measures can be mobilized, such as reading leaflets that contain school information out loud, setting up an advice and information desk, actively involving all parents in discussions to ensure they understand the information, providing refreshments during mothers' gatherings, and so on.

3. How to plan for equal access to and efficient use of open school data

> “Parents participate more actively in TIB-supported mothers’ gatherings because of their attractive techniques and extra efforts like public announcement through mobile loud speaker, providing refreshment during mothers’ gatherings.

An Upazila Education Officer in Bangladesh (Roy and Miah, 2018)

> “At the community level, human interaction is an important supplement to the supposedly technical and cold objectivity of data. Access for most people at the community level goes beyond the physical transfer of data from government to them. It is through the animation of discussion, problem-solving, or any kind of exchange or engagement, that people often begin to make sense of data.

Source: Parafina, 2018

The success of face-to-face meetings is conditioned by the capacity of facilitators to make information understandable, and to manage discussions in an inclusive way: ‘We want [school data] to become appealing and understandable regardless of the educational status of people’ (Parafina, 2018). In some cases, school principals and/or SMC members can play a key role in facilitating dialogue. Teachers can also be instrumental in promoting engagement among illiterate or semi-literate populations. And third parties can be mobilized, such as community volunteers in the case of CheckMySchool in the Philippines, parents who play the role of cultural brokers in the case of *Cek Sekolahku* in Indonesia (see *Box 18*), or field officers for citizen report cards in Nigeria.

3. How to plan for equal access to and efficient use of open school data

BOX 18

The role of 'cultural brokers' in the Cek Sekolahku project, Indonesia

In order to address the low level of parent participation, the local officer in Semarang hired a parent representative and trained her in the concept and goals of *Cek Sekolahku*. She became a cultural broker linking *Cek Sekolahku* officers, schools, and local communities in the school neighbourhood. She attended meetings and gatherings including with district leaders. The parent representative encouraged other parents to participate and take action in monitoring the school budget and programme. She acknowledged that this was not easy for some parents, who were afraid to question school policies and were worried that their criticism would affect their children, but after she explained that the anonymity of informants who submitted complaints to schools would be protected, some parents decided to participate.

Source: Felicia, 2018.

Lessons for planners

- Make the publication of school data compulsory at school level by law, specifying penalties in the event of non-compliance.
- Combine online and offline communication channels to adapt to the needs of target audiences, emphasizing face-to-face interactive discussion.
- Use inclusive techniques to engage all socio-economic groups in the dialogue, with the help of third parties (e.g. a cultural broker).
- Make sure that students are given opportunities to join the conversation about school data.

3. How to plan for equal access to and efficient use of open school data

3.4. Building the capacities of stakeholders in using school data

Key questions for planners

- What training activities will be provided to stakeholders to help them make use of school data?
- More specifically, how will the general public be empowered to demand change?
- What budget funds will be mobilized to support this whole process?

Actual use of open school data can be hampered by two major challenges. First, individuals may remain passive, relying on the engagement of others. This is what Barr et al. (2014) refer to as the 'free ride': to save time and effort, some prefer 'not to participate, while benefiting from the efforts of those who do'. Second, individuals may lack knowledge about their rights and entitlements, be unable to read and interpret the data, find it difficult to speak and act collectively, and/or be reluctant to use grievance mechanisms where these exist. To boost buy-in, it is important to set up training activities responding to their specific needs.

Such training activities can be organized on a variety of topics for each category of stakeholders. For instance, local officers can be trained in how to collect, manage, and control data. School principals and members of SMCs can receive training on the practical usage of open school data, and effective approaches to promote information disclosure. Teachers can be trained in how to use data to introduce pedagogical changes, and in how to organize parent and mothers' gatherings in an effective manner. Parents can be trained in how to use data for

3. How to plan for equal access to and efficient use of open school data

school improvement, how to monitor the school budget, and how to speak with a collective voice. Specific information sessions can also be held with students at the beginning of the school year on how to use data to effect school improvements.

IIEP-UNESCO's research on open school data

In India, a majority of parents (90 per cent) stated that they never attended any training or received any kind of guidance either in the schools or in the community regarding potential usage of the U-DISE school report cards.

In Indonesia, about 52 per cent of parents reported that they had participated in activities designed to inform them about open school data under the *Cek Sekolahku* project. Out of this proportion, about 54 per cent were 'greatly encouraged' by the ability to access school data, 37.1 per cent were 'somewhat encouraged', and the remainder were 'not encouraged'.

Source: Bordoloi and Kapoor, 2018; Felicia, 2018.

Supporting the participation of stakeholders through training represents a significant investment for open school data promoters. The cost for government-led initiatives can be particularly significant, as the number of people to be trained is huge, training capacities at local level are often reduced, and responsibilities for training tend to be distributed across different layers. The per-pupil cost of a participation-oriented initiative undertaken in Uganda (the Citizen Voice and Action programme) is estimated at US$1.5 per year (Lassibille et al., 2010). Possible options to reduce costs include producing handbooks and guidelines, using existing consultation and training structures, and mobilizing civil society actors.

3. How to plan for equal access to and efficient use of open school data

Table 9. List of possible training topics by stakeholder

Stakeholders	Examples of topics for training
Local education authorities	Modality and practical usage of open school data Methods and tools for data collection, management, and control
School authorities	Modality and practical usage of open school data Effective approaches to information disclosure Reading and interpretation of simple statistics Reading and analysis of student learning assessments Evidence-based decisions in schools
SMCs	Modality and practical usage of open school data Effective approaches to information disclosure Techniques to foster parent and student involvement
Teachers	Effective approaches to information disclosure Use of data for school improvement Use of data to introduce pedagogical changes Techniques to foster interaction with parents and students Effective organization of parents' and mothers' gatherings
Parents	Use of data for school improvements Monitoring of the school budget Speaking with a collective voice Procedures to lodge complaints
Volunteers	Techniques to foster parent and student involvement Managing complaints and conducting complaint verification
Students	Use of data for school improvements
Communities	Use of data for school improvements Speaking with a collective voice
Media	Right to information in education Access to and understanding of open school data initiatives

3. How to plan for equal access to and efficient use of open school data

Lessons for planners

- Formulate a training plan including categories of stakeholder targeted by the initiative.
- Organize training sessions or seminars for all students (not just student leaders).
- Use existing consultation and training structures to reduce costs and ensure greater sustainability.

3.5. Monitoring outcomes and impacts of open school data

Key questions for planners

- What outcomes are expected from the open school data initiative?
- What longer-term impacts are expected?
- How will evidence about outcomes and impacts be collected?

The outcomes of open school data initiatives will likely impact five domains: information, planning and management, available resources, education processes, and performance:

- *Improvement in information*: Demand for more information, more often, with more stakeholders able to access and verify it, can lead to improvement in the quantity and quality of school data. Dupain and Thu Phuong Nguyen (2019) note that school report cards in Ghana 'allowed EMIS to collect two types of information it had previously lacked: teacher attendance and pupil attendance'.

3. How to plan for equal access to and efficient use of open school data

— *Improvement in planning and management*: Open school data initiatives can contribute to a stronger focus on evidence-based planning, better consideration of community needs in school improvement plans, the institutionalization of feedback loops, and the operationalization of complaint mechanisms. School principals, in particular, can be incentivized to undertake their management and supervisory duties more carefully (e.g. keeping enrolment and attendance registers, monitoring teacher absences, reporting to local authorities).

> “ 100% of the schools receiving support to introduce [school report cards] had improvement plans approved by their SMCs, as against 61% at the start of the programme.
>
> *Source*: World Bank, 2017

— *Improvement in available resources*: By providing information to users, open school data initiatives can help fix identified shortcomings in terms of fund leakage, teacher shortages, missing textbooks, and deficiencies in school infrastructure or equipment. In Guatemala, for instance, those responsible for the *School Card* (‘Ficha escolar’) programme indicated that open school data allowed school principals to request a budget corresponding to their school enrolment figures. Similarly, in TIB intervention schools in Bangladesh, parents used school data to pressure education officers to increase funding for their schools (Roy and Miah, 2018).

3. How to plan for equal access to and efficient use of open school data

IIEP-UNESCO's research on open school data in the Philippines

In the case of the *School Report Card/Transparency Board* and CheckMySchool programmes, teacher actions took the form of pressuring education and school authorities to make better use of funds (68.75 per cent and 66.67 per cent, respectively), pressuring authorities to reduce corruption in the purchase and use of facilities (43.75 per cent and 41.67 per cent), requesting authorities to increase funding (43.75 per cent and 41.67 per cent), and demanding that authorities improve education quality (37.5 per cent and 33.33 per cent).

Source: Parafina, 2018.

— *Improvement in education processes*: Open school data can contribute to the clarification of roles and responsibilities of all stakeholders, and provide an accountability framework to encourage them to fulfil their respective duties, especially in the case of participation-oriented initiatives. The AGEMAD project in Madagascar, for instance, resulted in improvements in how teachers executed their educational duties (i.e. lesson planning and preparation, continuous assessment of pupils, support for those with learning difficulties) (Lassibille et al., 2010). Other noted impacts include greater engagement of parents and communities in school decision-making and corresponding changes in attitudes.

3. How to plan for equal access to and efficient use of open school data

> “Every Friday, the Bupati holds a town hall meeting where anyone can raise questions, complaints, or requests related to public services, including about education policies. The district leader admitted that the Bupati approach influenced school practices and, in particular, reduced forms of malpractice such as illegal levies and lack of good quality school facilities.
>
> *Source*: Felicia, 2018

— *Improvement in performance*: Improvements in terms of performance are more difficult to demonstrate, as many other factors contribute to changes in teacher or student attendance, repetition and dropout rates, student results, and so on – either contextual factors (e.g. school location, socio-economic status of parents, their level of educational attainment), or school factors (e.g. teacher qualification and training, number of instructional hours, availability of textbooks and other learning materials, class organization and instructional approaches, school friendliness). However, some projects report improvements in pupil attendance and punctuality (the AGEMAD project in Ghana and the Link project in Malawi), and repetition rates and teacher attendance (the AGEMAD project). Few projects report improvements in learning outcomes. Dupain and Thu Phuong Nguyen (2019) cite the midterm evaluation of Link's INSPIRE project in Malawi, which 'reports evidence linking improved academic performance with [the] introduction of processes involving [school report card] use' (Link, 2017).

3. How to plan for equal access to and efficient use of open school data

Table 10. Expected outcomes from open school data initiatives

Domains	Examples of expected outcomes
Improvement in information	Improved content and functioning of EMIS systems Better provision of data to schools and communities Better appraisal of problems and their causes
Improvement in planning and management	Stronger focus on evidence-based planning Better district and school planning Better execution of management and supervisory duties by school principals Creation of a feedback loop with parents, students, and communities Institutionalization of school and mothers' gatherings Capacity development of parents, students, and communities to suggest school improvements Increased awareness among parents of their children's right to quality education Increased awareness among parents of their own responsibilities (pupil nutrition, attendance, punctuality) Complaint mechanisms in place and operational
Improvement in available resources	Improved transparency of the school budget Increased community oversight over the use of resources Requests made to improve facility and equipment based on data Remedial measures taken to address shortcomings in the use of resources
Improvement in education processes	Better execution of teaching duties by teachers Greater frequency of SMC and PTA meetings Increased number of meetings involving the school community at large (including the most vulnerable) Increase in the number of home visits More regular sharing of good practices among schools Growth in the number of corrupt practices reported and addressed
Improvement in performance	Improved teacher and/or student attendance rates Drop in repetition rates Improvement in learning outcomes Increase in exam passing rates

3. How to plan for equal access to and efficient use of open school data

IIEP-UNESCO's research on open school data in the Philippines

The survey suggested that teachers were the most aggressive action-takers (55 per cent), and their personal accounts appear to show that [school report card] initiatives had the most impact on them. … Being equipped with monitoring tools and being able to sign off on certain decisions through [the school improvement plan], [the annual improvement plan], and even procurements, strengthened their position. Parents described more moderate actions, according to the survey (at most 29 per cent), and tended to rely on organized PTAs or other sectors, such as teachers and third-party CheckMySchool monitors, to help them.

Source: Parafina, 2018.

Long-term impacts

At least four major long-term impacts of open school data initiatives can be identified. The first of these concerns the establishment of a mutual accountability framework, whereby the roles and responsibilities of each stakeholder (education authorities, but also school principals, SMC members, parents, students, and communities) are more clearly established. The second relates to the development of a culture of open government based on community participation and empowerment and increased dialogue. The third involves the collective reading and interpretation of data, which can encourage sensible and shared analysis of information, establishing a link with concrete problems at the service delivery level. Finally, the fourth long-term impact is the building of trust between education/school authorities and the general public, by encouraging efforts to reach

3. How to plan for equal access to and efficient use of open school data

a consensus on working together towards better-quality education.

Figure 6. Snapshots of open school data impacts

In Australia, 'principals more openly (and accurately) share information about the performance of their schools, and stakeholders and media are better informed about the limitations of the data when it comes to making conclusive judgements of performance based on single year results' (Rabinowitz, 2018).

In Indonesia, 'parents learned the importance of working hand-in-hand with teachers, rather than aggressively criticizing without helping them to find solutions' (Felicia, 2018).

In the Philippines, 'for many stakeholders, the bottom line concerning the usability of the [school report card]/[transparency board] information is the increased level of trust in the school leadership. It becomes the antidote to the usual doubts about the capacity and integrity of school administrators' (Parafina, 2018).

Lessons for planners

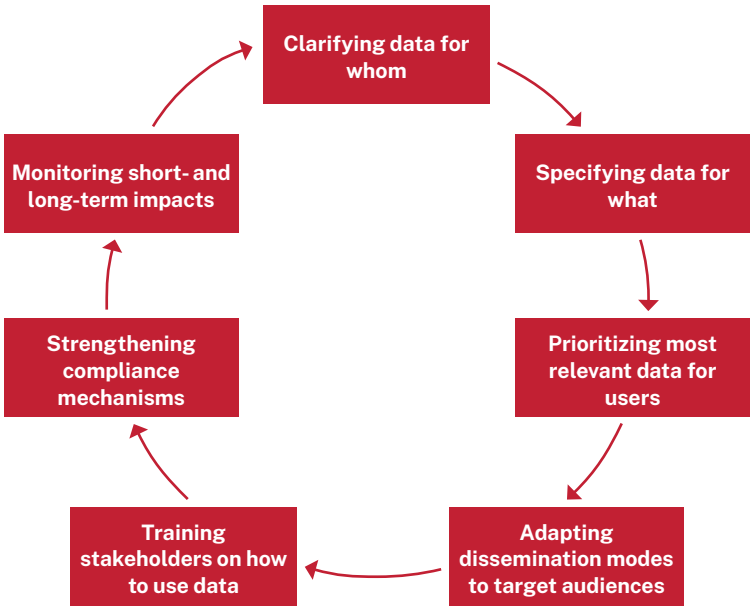
- Distinguish between different types of outcome of open school data in terms of improved information, planning and management, available resources, and education processes.
- Be sensible when defining performance outcomes, taking into account all other factors that play a role.
- Pay due attention to the longer-term impact of open school data initiatives, in terms of mutual accountability and building trust.

3. How to plan for equal access to and efficient use of open school data

In summary: How to plan for an equal and efficient use of open school data

The major steps required for successful design and implementation of open school data initiatives are summarized in *Figure 7* below.

Figure 7. Major steps involved in the planning of open school data initiatives



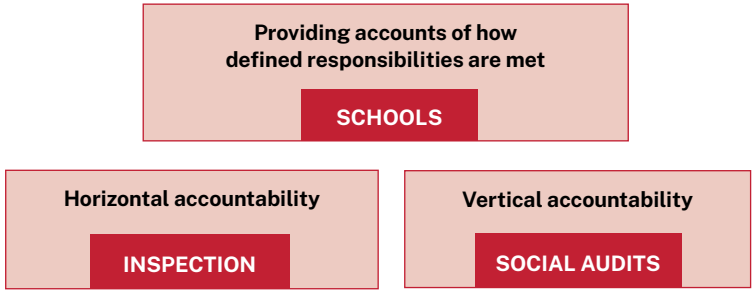
4. How to link open school data and accountability

4.1. Understanding various accountability models

Vertical versus horizontal accountability

The 2017/18 edition of the *Global Education Monitoring Report* defines accountability as 'a process aimed at helping actors meet responsibilities and reach goals. Individuals or institutions are obliged, on the basis of a legal, political, social or moral justification, to provide an account of how they met clearly defined responsibilities' (UNESCO, 2017). Stapenhurst and O'Brien (2008) introduce a distinction between **horizontal accountability**, whereby executive authorities are monitored by 'a third body that enjoys relative autonomy' (i.e. the parliament or the judiciary); and **vertical authority**, whereby 'citizens, the media and civil society seek to enforce standards of good performance on officials'. Applied to the education sector, this can lead to a distinction between monitoring procedures handled by public authorities (either internal or external) on the one hand, and social monitoring tools involving users and communities on the other.

Figure 8. Horizontal and vertical accountability within education systems



4. How to link open school data and accountability

The publication of data on school inputs, processes, and/or performance can encourage both vertical and horizontal accountability. Although school data are often already accessible to education authorities, publication makes them more widely available across administrative levels (including local and school levels), and across stakeholders (including school management committees). Furthermore, publication of school data provides an opportunity for a larger range of stakeholders, such as parents, students, communities, and civil society organizations, to access and make use of these data. In both cases, publication encourages a change of culture, requiring that 'teachers and administrators become comfortable discussing strengths and weaknesses, explaining a variety of statistical data and facilitating positive change' (Anderson, 2005).

From answerability to enforceability

Such levels of requirement can be more or less demanding for the entities concerned. In some cases, accountability is limited to **answerability**, with the concerned entity (e.g. schools) asked to report on their activities (e.g. how funds have been spent). However, in some cases requirements extend further up to **enforceability**, with the concerned entity obliged to change behaviours or actions. While answerability can form part of (institutionalized) periodic or routine compliance procedures, enforceability necessitates in-depth discussions between the entity conducting monitoring and the institution being monitored, in order to understand why standards have not been followed or objectives not met, and to establish means to address the situation and ensure that decisions are properly enforced.

4. How to link open school data and accountability

Financial, management, and pedagogical accountability

Open school data initiatives can have an impact on three major domains of accountability: financial, management, and pedagogical. Each of these is described in *Table 11*.

Table 11. Three major domains of accountability affected by open school data

Financial accountability	Management accountability	Pedagogical accountability
Public authorities and schools are held accountable for the timely and correct allocation and use of their resources, especially funds	Public authorities and schools are held responsible for all management-related activities, such as teacher hiring, staff attendance, supervision of teaching and learning, and parental involvement	Public authorities and schools are held accountable for students' knowledge and results

Financial accountability implies that public authorities and/or schools are held accountable for the timely and correct use of educational resources. The publication of school funding data can be used in two ways: first, it can give school authorities and/or users the opportunity to check that they have received the funds they were supposed to receive, on time; and second, it can give users (i.e. parents, pupils, communities) the opportunity to check that school authorities have used the funds in a transparent and appropriate manner. For this to happen, financial information needs to be sufficiently detailed to be useful, as is the case with the transparency board (TB) in Bangladesh, which discloses all school financial transactions.

4. How to link open school data and accountability

> We became more conscious because we are being checked. We managed the resources better based on needs, pursued the right strategy, and improved governance of resources. If you don't do that, the collected data will show it.
>
> A secondary school teacher in Bangladesh (Roy and Miah, 2018)

Management accountability means that public authorities and schools are held responsible for all management-related activities, such as teacher hiring, staff attendance, supervision of teaching and learning, and parental involvement. Open school data initiatives will only affect specific aspects of management on which they shed a light (e.g. number of teachers, teacher attendance or absenteeism, number of school management committee [SMC] meetings). Released data on teacher numbers, for instance, can be used to detect instances of ghost teachers; however, information on teacher attendance and absenteeism needs to be specifically collected, and is therefore found in only a few cases.

Pedagogical accountability implies that public authorities and schools are held accountable for students' knowledge and results. In other terms, educational authorities 'are held responsible for the quality of their products, namely students' knowledge, skills, behaviours, and performance' (Hallak and Poisson, 2017). These dimensions of accountability are usually captured by data on student results, as measured through standardized testing. Such data can be used both by local authorities to provide extra support to

underperforming schools, and by school stakeholders to discuss strategies to improve results. However, this domain is particularly complex as underperformance can be linked to myriad factors that are difficult to isolate and act upon.

BOX 19

Monitoring of teacher and parent accountability through Indonesian school report cards

Teacher attendance addresses the issue of teacher absenteeism, and is thus a mandatory indicator. The presence of other indicators varies by community, and can include whether teachers regularly assign students homework, whether they use corporal punishment, and whether they visit absent students. Teachers, in turn, employ indicators to better solicit and guarantee parental contributions to student education. After establishing the key indicators, the village forms a user committee consisting of nine members (the school principal, teachers, representatives from the village council, youth leaders, parents, and other community members). The user committee is tasked with monitoring and scoring each teacher and principal on a monthly basis. The monitoring methods vary by community and depend on the specific indicators chosen.

Source: Cheng and Moses, 2016.

4. How to link open school data and accountability

BOX 20

School performance during the Day of Excellence in Colombia

During E-Day [the Day of Excellence], the national discussion focuses on ways to improve student learning, starting with analysis of the Synthetic Index of Educational Quality (ISCE) and continuing with strategies to promote and strengthen reading and writing at home. All rural and urban schools, public and private, large and small, participate in E-Day. The clarity of school report cards and the simplicity of the information provided have been crucial to their use. Likewise, the emphasis placed by the Ministry of Education on exchanges between schools on index results and the formulation of improvement measures have led to positive impacts.

Source: Brito, 2019.

Open school data initiatives can address one or several of the domains of accountability listed above according to the priorities set by their initiators. In the Philippines, CheckMySchool (CMS) encompasses 'elements of management, financial, and pedagogical accountabilities as it welcomes and encourages disclosure on any issue that interests or affects the stakeholders' (Parafina, 2018). In most cases, school principals as well as teachers are the ones to be held accountable based on the information provided. But as illustrated by the above examples, local and central authorities, as well as parents and students, can also be held accountable based on the data provided.

Lessons for planners

- Clarify from the outset how open school data can contribute to improving accountability in the education system.
- More specifically, reflect on how published data can help improve financial, management, and/or pedagogical accountability.
- Exercise caution regarding the lessons drawn from school performance data.
- Use open school data to promote vertical and horizontal accountability.
- Ensure that school actors are not held accountable for decisions taken at a higher level.

4.2. Formulating a theory of change

Experience shows that linking open school data and accountability is not necessarily straightforward in practice, as most initiatives lack 'clear, effective accountability measures, as well as clear links to those capable of making changes' (Cheng and Moses, 2016). Strengthening the link between open school data and accountability therefore requires a clear understanding of who is going to use the information provided and for what purposes, and the possible outcomes that can be expected. In other words, it is important to formulate a theory of change. Four main drivers for change can be considered within this framework.

4. How to link open school data and accountability

Table 12. Four major drivers that link open school data and accountability

Linking data with...	Main actors	Theory of change
The market	Parents Schools	Schools compete for enrolment, with parents using the information provided to choose where to enrol their children. Schools seek to promote and protect their reputation.
A collaborative planning imperative	Local education authority School authority SMC Teachers	The school authority is asked to develop a school improvement plan using school data, in consultation with the SMC and other school actors. The plan becomes a prerequisite for receiving funding.
Rewards and sanctions	Central or local education authority Schools	Low-performing schools receive extra funding and/or support (or are sanctioned in some cases) by the central or local education authority for achieving (or failing to achieve) set standards. High-performing schools are rewarded.
User participation	Parents Pupils (in a few cases) Communities School authority Civil society Media (in some cases)	Users discuss public school data to identify problems and pressure the school authority and/or local education authority to remedy them.

Source: Adapted from Cheng and Moses, 2016.

4. How to link open school data and accountability

> There is usually an assumed link that leads from awareness (through transparency and information) to empowerment and articulating voice (through formal and informal institutions) and ultimately accountability (changing the incentives of providers) so that they change their behaviour and respond in fear of sanctions.

Source: Bordoloi and Kapoor, 2018

Market model

According to the **market model**, parents can use the information provided on each school to choose where they want to enrol their children, with the result that schools compete for enrolment. In this case, publishing school data generates an incentive for school authorities and teachers to improve the service provided (e.g. quality of facilities, availability of equipment, student results) in order to attract pupils and access additional resources accordingly. Even in contexts where competition is low, the release of information encourages schools to maintain or protect their 'reputation'. Under this neo-liberal approach, parents are defined as 'consumers' of the education service operating in a 'free market', meaning that they can decide where to enrol their children regardless of location.

Such models are found in countries that have introduced a policy of school choice, with which both schools and parents are now familiar. Indonesia provides a good illustration of this approach, where school report cards are used by parents to select schools, but are also used by schools to promote their reputation – as they are also authorized to select students (notably on performance criteria). This is described by Felicia

4. How to link open school data and accountability

(2018): 'Influenced by the longstanding tradition of school choice in Indonesia, publishing information about schools is viewed by school-level actors as a way to promote school programmes and achievements.' In other words, public data are used to serve local market competition.

> Schools should publish our academic achievements, as this would reflect well on the institution, and thus make the students proud of attending a highly reputable school.
>
> Students in Indonesia (Felicia, 2018)

Open school data initiatives that follow this market model focus on school performance data, regarded as the most important criterion guiding parental choice. However, other types of information that illustrate the quality of the offer (e.g. number of computer rooms, internet availability, extracurricular activities, school or pupils' awards) may also be added. Such a focus on performance has been criticized in the literature (UNESCO, 2017) for fostering a 'teaching to the test' culture, promoting competition among teachers, and increasing pressure on pupils. Critics also often cite the difficulties some actors encounter in interpreting student results data correctly. Finally, the implications in terms of equity and inclusiveness are evident, with the most privileged groups enjoying easier access to a wider school offer, while more disadvantaged groups are limited to schools located in the vicinity.

4. How to link open school data and accountability

This market approach is not usually put forward by instigators of open school data. Moreover, it is not applicable to contexts where school choice is not the general rule, or where the public school offer is limited. Roy and Miah (2018) note that in Bangladesh 'parents who send their children to public schools, particularly in rural locations, prioritize proximity to their locality', although they also consider school academic reputation. In Pakistan, 74 per cent to 86 per cent of parents surveyed stated that there was no correlation between their choice of school for their child and the information they accessed on the school. In the case of *My School* in Australia, initiators of open school data defend themselves against criticisms of promoting competition among schools, instead insisting that their aim is to concentrate on school gain (i.e. growth data) and to target areas for school improvement.

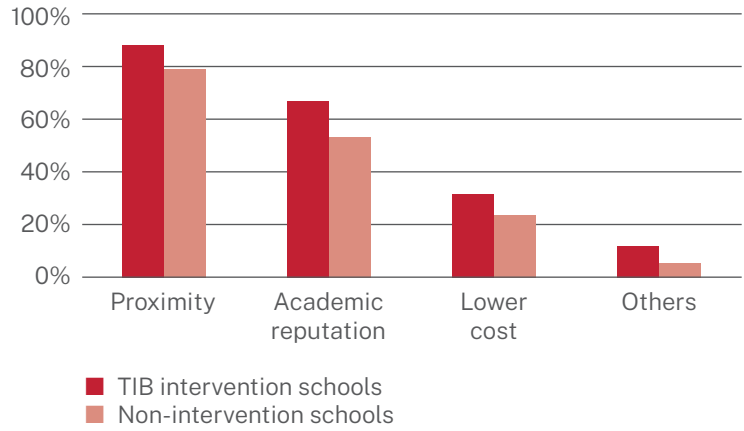
IIEP-UNESCO's research on open school data in Punjab, Pakistan

When asked if the publication of school data influenced the decision of parents to send their child to a particular school, 74 per cent of respondents in Rawalpindi answered in the negative. Similar trends were seen in other districts: 86 per cent of parents in Hafizabad and 80 per cent of parents in Chiniot agreed that there was no correlation between their child's enrolment and the information they had accessed through the PMIU [Programme Monitoring and Implementation Unit].

Source: Khan, 2018.

4. How to link open school data and accountability

Figure 9. Parents' reasons for selecting schools in Bangladesh (percentage; multiple response)



Source: Roy and Miah, 2018.

Collaborative planning imperative model

Under the **collaborative planning imperative model**, the school authority designs a school improvement plan using open school data, in close consultation with the SMC and other school actors. The preparation of the plan becomes a condition for receiving funding. Such an approach needs to be seen in the wider context of the decentralization and self-management movement in the 1980s, which built on the idea that decisions are best taken at the point of implementation, and of shared decision-making at the school level, which emerged at the end of the same decade. According to Cheng (1996), the main rationale underlying this shift was that 'the decentralization of power to school level could not guarantee

4. How to link open school data and accountability

that schools would use power effectively to enhance education quality. Therefore, both school responsibility bearers and education service receivers should share the decision-making at the school level.'

Open school data provide an opportunity to reactivate this notion of shared decision-making at the school level, by encouraging school communities to base their exchanges and reflections on a set of objective data that highlight the current situation of the school, and to give them elements to make comparisons with national standards or other schools. The fact that such data are shared not only with school principals but also with SMC members, teachers, parents, pupils, community members, and so on, provides a further impetus to move towards more collaborative approaches. In the case of the Philippines, for instance, school authorities are asked to share school report cards with members during SMC meetings, and also receive instructions to display them on a public noticeboard. All SMC members have the right to raise concerns and provide suggestions, and to participate in the elaboration of the school improvement plan.

SMC meeting in India

Source: Bordoloi and Kapoor, 2018.

4. How to link open school data and accountability

Such an approach is not limited to government-led initiatives. In Malawi, for instance, the non-governmental organization (NGO) Link decided to make use of open school data to encourage collaborative planning approaches.[15] The school community was invited to discuss school report card content during the school performance appraisal meeting, identify problems, and formulate suggestions on this basis. The annual school improvement plan was then designed accordingly, with Link providing training in school management to support the process. As a result of a similar approach, the World Bank (2017) calculated that all the schools in Ghana that received support for the introduction of school report cards had approved improvement plans by SMCs, versus only 61 per cent at the start of the project.

> “Previously, school management decisions had been taken by a handful of school staff without really involving parents or the community, even though everyone in Malawi knew this type of arrangement was conducive to corruption.
>
> A Link project manager in Malawi
> (Dupain and Thu Phuong Nguyen, 2019)

Rewards and sanctions model

The **rewards and sanctions model** links financial incentives to school performance, using student test results as a

15 See: www.lcdinternational.org/country/malawi

reference. It rewards high-performing schools and sanctions low-performing schools. Such an approach builds on the concept of performance-based funding, according to which the funding of inputs is insufficient to improve educational outcomes, hence the need to introduce financial incentives to motivate actors to change behaviours and practices in order to reach set objectives. Encouraged by the rise in testing data and implemented in particular in the United States, this model has been criticized for its lack of impact on performance, and for its detrimental effects on equity. UNESCO (2017) also cites criticisms that 'tightly tying a single score to school livelihood is unfair, as test results are heavily determined by factors outside school control, such as natural ability, socio-economic background, after-school tutoring and parental involvement'.

The rewards and sanctions model exists independently from open school data. Public education authorities can decide to target incentives based on the data they hold, without necessarily publishing them. However, few examples of school reports comprising performance data evolve in that direction, as illustrated by the example of school excellence reports in Colombia (*Box 21*). Others use indicators as an alternative to student results in order to detect low performance – for instance, teacher attendance and absenteeism rates under the PMIU project in Punjab, Pakistan. In this case, teachers with full attendance can be awarded a bonus or receive public recognition, while individuals whose attendance is irregular may incur minor penalties, or more serious sanctions including dismissal, when absenteeism is prolonged.

4. How to link open school data and accountability

BOX 21

School excellence reports and awards in Colombia

To increase accountability, the Ministry encourages schools to coordinate with local education offices and sign an 'Agreement of Excellence' listing their goals for the following year. At present, the Agreement of Excellence does not include consequences for success or failure. However, the Ministry of Education has announced that, as of 2016, it will start rewarding schools financially based on the degree to which they meet their self-designated goals.

Source: Cheng and Moses, 2016.

IIEP-UNESCO's research on open school data in Punjab, Pakistan

In Rawalpindi, all head teachers used data specific to their school to generate comparisons with other schools, with 66.6 per cent of head teachers in Hafizabad and 50 per cent in Chiniot using data in a similar manner. These responses show how access to data on school self-performance, as well as on the performance of other schools in the same or other districts, can generate a spirit of competition, whether through beating personal records for the previous year, as in Hafizabad, or comparison with a manufactured score based on minimum standards of performance, as in Rawalpindi.

Source: Khan, 2018.

4. How to link open school data and accountability

Most of the documented examples of open school data adhere to an opposite philosophy, however. Instead of sanctioning low-performing schools, they provide them with extra support. Under the PMIU project, for instance, teachers working in low-performing schools receive support and coaching, and students are given access to refresher courses (Khan, 2018). In the state of Colima in Mexico, school directors and teachers 'are advised how to interpret the ENLACE [Evaluación Nacional de Logro Académico en Centro Escolares; National Assessment of Schools' Academic Performance] results and make corresponding pedagogical adjustments. Through the establishment of professional data networks, the schools [are] connected with best-performing schools in the same locality, and advised on how to develop school improvement plans' (Cheng and Moses, 2016). Similarly, in Australia, community organizations use *My School* data to support improvements in schools with a low score on the Index of Community Socio-Educational Advantage (ICSEA).

User participation model

Under the **user participation model**, parents and communities are invited to access public school data, discuss them, and ask the school or local education authority to address the highlighted shortcomings. The model assumes that the pressure exerted by users will lead public authorities to offer a better service. All open school data initiatives following a participation-oriented approach adhere to this principle, according to which shorter routes of accountability (e.g. parents and school authorities) should be preferred vis-à-vis longer routes (e.g. citizens and the state), when the latter have proved their incapacity to resolve problems at the micro level. The close and continuous relationship between

users and school or local education authority is considered a key feature to motivate providers to react and address difficulties.

To be effective, the user participation model requires that users not only have the opportunity to access information, but also to act upon it. When open data initiatives are limited to providing information to users, they follow what Parafina (2018) calls a 'pre-public participation model', citing the example of school report cards in the Philippines. This example 'involves pre-public participation because [the Department of Education] limits the purpose of school report cards to information dissemination and communication, but nevertheless provides stimulus to citizen demand. Through the school report cards, stakeholders can inquire about issues and, based on that inquiry, apply pressure on school administrators to perform better.' However, there are no structured mechanisms in place to ensure this happens, and no record of the requests or responses. As such, the effectiveness of the school report cards depends on the willingness of local or school authorities to respond to inquiries.

> "In some cases, school administrators prevent or discourage parents from asserting their right to inquire or demand because of the limited view that the school's responsibility ends in providing information.

Source: Parafina, 2018

Several prerequisites improve the effectiveness of the user participation model. First, the organization of awareness-raising and capacity-development activities, with the help of civil society, is essential to ensure that parents (particu-

larly mothers), communities, and teachers are well-informed about their roles and responsibilities, and to encourage them to raise questions related to teacher shortages and attendance, pupil results, and so on. Second, it is important to aggregate and articulate the questions and concerns expressed by those using adequate community mobilization techniques. Third, the right of users to obtain a response from the school or local education authority needs to be enforced with the support of civil society, and sometimes also of local media.

IIEP-UNESCO's research on open school data in India

A majority of parents (90 per cent) mentioned that they have never attended any training or received any kind of guidance either in the schools or in the community regarding the use of information to demand accountability from schools.

Source: Bordoloi and Kapoor, 2018.

Finally, it is hoped that increased public participation will not only contribute to holding schools and local education authorities more accountable, but will also help 'to coordinate efforts among all education stakeholders. Such coordination is important because education involves not only schools, but also parents and the community. Research indicates that improved communication and coordination results in a corresponding increase in the level of investment by all stakeholders to improve children's education' (Cheng and Moses, 2016). In other words, the active engagement of all school actors in the process not only leads a school or local education authority to

act, but also encourages teachers to do better, and parents to devote more time and attention to their child's education.

Lessons for planners

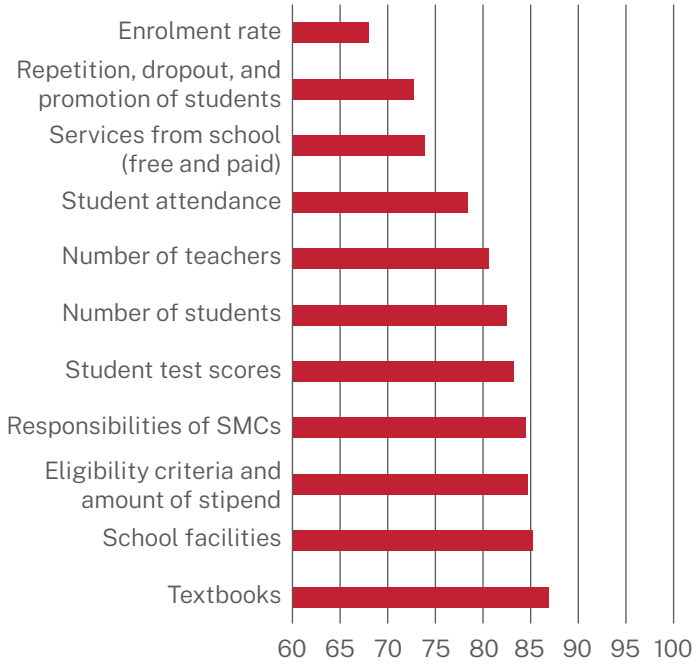
- Design a clear theory of change that links open school data with accountability from the outset.
- Give priority to 'soft accountability' models, such as collaborative planning imperative and user participation models, and consider the possibility of combining the two.
- Be aware of the risks involved with 'hard accountability' models such as market and rewards and sanctions models, and try to limit them.

4.3. Incorporating corruption concerns from the outset

Open school data cannot address all corrupt practices in the education sector, but can help address some of them. To facilitate this process, the data should illuminate areas most vulnerable to corruption (e.g. school funding, facilities, equipment, textbooks, teacher attendance, parental fees). In Pakistan, for instance, all head teachers in surveyed districts stated that the indicators most critical in fighting corruption were teacher attendance, textbook provision, and school inspections (Khan, 2018). In the Philippines, 'parents, teachers, and community leaders are likely to use CMS rather than school report cards or TB data to reveal the misuse of school facilities, equipment, textbooks, and other resources (though this was less pronounced among teachers)' (Parafina, 2018). In Bangladesh, parents emphasized instead the amount of stipends, school facilities, and textbooks (Roy and Miah, 2018).

4. How to link open school data and accountability

Figure 10. Percentage of parents emphasizing the usability of different categories of data to fight corruption in Bangladesh



Source: Field survey data collected as part of IIEP-UNESCO's research on open school data in Bangladesh: Results from Transparency International Bangladesh (TIB) intervention schools (Roy and Miah, 2018).

4. How to link open school data and accountability

Table 13. Main characteristics and advantages and disadvantages of each accountability model studied

	Theory of change	Advantages	Disadvantages
The market	Pressure on parents to send their children to best-performing schools Public access to school performance data Competition between schools to improve performance Pressure on school principals and teachers to improve results	Focus on improving student results	Exacerbated competition among schools, teachers, and pupils
Collaborative planning imperative	Pressure on school principals to share authority regarding school planning and management School data shared with school authorities, SMCs, and the general public Production of a collaborative improvement plan Pressure on school authorities to reach set objectives	Improved quality of the planning process Identification of several dimensions for systematic improvement Integration of school planning into the overall planning cycle	Domination of school principals over other actors (SMCs) in the process Limited involvement of other users in the process

4. How to link open school data and accountability

	Theory of change	Advantages	Disadvantages
Rewards and sanctions	Pressure on schools to improve performance Rewarding of high-performing schools Extra resources and/or support (or sanction) to low-performing schools/individuals Schools/teachers modify their behaviour	Targeting of extra resources and/or support to lower performing schools	School performance reduced to test scores Exacerbated competition among schools and teachers Negative impacts of sanctions
User participation	Pressure on school/local education authority to take into consideration user perspectives on problems and solutions Organization of activities involving communities (surveys, mothers' gatherings, community monitoring) Identification of priority issues to be addressed School/local education authority takes action to address those issues	Promotion of user empowerment Improved reflection of concrete needs at school level Focus on immediate issues to be addressed	Lack of consequences for school authority/local education authority Limited capacity of school authorities to act when decisions are taken at a higher level

4. How to link open school data and accountability

Moreover, a variety of domains where corrupt practices can occur are likely to benefit from open school data initiatives. These may vary according to the context, and can be grouped into three areas: school data, resource management, and staff behaviour. These domains are further analysed in the following sub-sections.

School data

The act of transparently displaying school data makes it much more difficult for a variety of actors to manipulate information. Cases in point include the number of pupils enrolled and the number of teachers. Publicizing this information facilitates easier detection of instances of inflated enrolment to attract more funds or the inclusion of ghost teachers on teacher payrolls. Moreover, the multiplication of data combined with their publication has encouraged initiators to standardize indicators, enabling wider use of technology to capture and transmit data instantly, and to ensure data accuracy prior to publication. Under the PMIU project in Pakistan, for instance, standardized data are now collected using Android tablets that are synchronized directly to an online database, avoiding manual data entry (Khan, 2018).

In addition, thanks to the increased volume of school-level information, a wide variety of data are now collected on similar aspects, providing opportunities for cross-checking and detecting potential anomalies. Under the *Sekolah Kita* project, for instance, each Indonesian school needs to submit several variables about students (e.g. student family background, distance between the student's home and school) as well as teachers (e.g. qualifications, status) The ease with which it is possible to verify data and detect irregularities constitutes

a strong deterrent against the manipulation of information. Similarly, under the *Cek Sekolahku* project in Indonesia, the condition of facilities are now determined by a system based on school responses to approximately 20 questions. This reduces the risk of overestimating damage to facilities in order to attract more funds, or underestimating damage to obtain good grades during school accreditation assessments.

> “This is an interesting fact: the number of primary school students keeps decreasing. With the *Dapodik* system in place, it is much more difficult for schools to inflate their student numbers. For each student, schools have to submit many variables including their demographic background, family background, academic progress, and even the distance between the student’s home and her/his school. It is much more difficult to manipulate students’ data now.

A provincial district representative in Indonesia (Felicia, 2018)

Resource management

The publication of financial information about schools can contribute to improving transparency regarding the allocation and use of funds. The case of Uganda, which is often quoted in the literature, illustrates how information campaigns and the decision to ask each primary school to post information on financial inflows had a tremendous impact on reducing fund leakage. Such fund leakage dropped from 78 per cent in 1995 to 18 per cent in 2001 (Reinikka and Smith, 2004). More recent examples illustrate how the display of financial data can be used by communities to inquire about school spending, and

4. How to link open school data and accountability

put pressure on school officials to make better use of funds – as is the case with the TBs displayed by Filipino schools at the request of the Department of Education (Parafina, 2018).

School fees and student stipends are yet other domains where open school data can play a useful role in reducing malpractice. Under the *Cek Sekolahku* project in Indonesia, information about the amounts requested from parents helped to uncover cases of collection of illegal fees, for instance to buy uniforms (Felicia, 2018). Similarly, in Bangladesh, 'awareness of the actual amount of the stipend, exam fees, and other entitlements empowered parents to raise their voices against irregularities in stipend distribution and payments' (Roy and Miah, 2018). Information about infrastructure, equipment, or textbooks can also lead to improvements. Dupain and Thu Phuong Nguyen (2019) refer to the example of the Ethiopian Social Accountability Program, where 'community monitoring of infrastructure work reportedly led to the discovery of materials not meeting contract specifications and their replacement by the construction firm'.

> "For me, the most important information is the school budget. If we know how our school allocates the BOS [*Bantuan Operasional Sekolah* (School Operational Assistance Fund)] and other funds from the government, we will understand if they really spend the fund for the textbooks, chairs, and desks that are available in our classrooms. But if we find that many desks and chairs are broken and textbooks are not available, we can question the administrators about how they spend the funds and why they don't prioritize our needs.
>
> A student in Indonesia (Felicia, 2018)

4. How to link open school data and accountability

Staff behaviour

Finally, the publication of data on teacher absenteeism is debated in a small number of countries. In India, such data are not included in the Unified District Information System for Education (U-DISE), due largely to the lack of reliability of the indicator (i.e. self-reported in school registers) (Bordoloi and Kapoor, 2018), while in Indonesia, an innovative Android app is used to monitor school attendance and incorporate this information into the school report card. At the same time, efforts have been made to change community perception regarding teacher behaviours, and encourage consequences in cases where teachers' absenteeism is proven (Cheng and Moses, 2016). Beyond the issue of absenteeism, there are many testimonies regarding the capacity of open school data to self-regulate individual behaviours, with public education authorities and school actors tending to become more vigilant and cautious due to the increased monitoring opportunities generated.

> "School data foster efficiency by keeping teachers attentive at all times, since they are being inspected more closely than before.
>
> A student in Indonesia (Felicia, 2018)

Building trust through a calibration policy

Although open school data can help reduce malpractice, the fight against corruption is rarely presented as their main objective, but rather as an induced effect. There are two main reasons: first, anti-corruption policies are often perceived by

4. How to link open school data and accountability

actors as 'another regulation competing with policies such as teacher quality and curriculum' (Felicia, 2018); second, initiators of open school data are concerned with building trust and fostering collaboration, and as a consequence prefer to emphasize the positive benefits of open data and encourage ownership of the process. In other words, 'stakeholders tend to avoid risky confrontation, shaming, or legal administrative cases in order to maintain harmonious interpersonal relationships' (Parafina, 2018).

However, open data do encourage action to address challenges relating to accountability, by generating questions and demands from users. With this in mind, Parafina (2018) pleads for 'the introduction of [school report cards] as an information and communication tool attended to the growing, albeit often discreet, call for transparency from the school community, without antagonizing or threatening the principal's leadership and authority'. The idea here is to facilitate incremental progress towards the integration of a stronger anti-corruption component, without threatening actors and creating resistance based on the fear of sanctions. This is illustrated by the *Sekolah Kita* project in Indonesia, which led to the signature of a Memorandum of Understanding between the Ministry of Education and Culture and KPK (Anti-Corruption Agency) in 2017, with a view to increasing community participation in the monitoring of school facilities, equipment, and teacher absenteeism.

4. How to link open school data and accountability

BOX 22

Open school data: Communication or accountability?

In our official communications, the messaging really is that the School Report Card is for communication, but the policy could serve a secondary purpose [of accountability]. We didn't articulate that in policy; we expected that as a potential outcome of the School Report Card. Once schools become comfortable with opening up to stakeholders, when they become comfortable sharing their data, then later on the secondary purpose of promotion of accountability [will be served]. That's why we present the School Report Card as a developmental tool. It may soon be calibrated as a tool for accountability. But, for the short term, because our school heads are not yet comfortable with the concept, we have to introduce it in a subtle way.

Source: Parafina, 2018.

Established consequences and complaint mechanisms

Identifying corrupt malpractice with the help of open school data is not enough. It is crucial to ensure that the pressure exerted by parents, for instance, on education and school authorities to reduce fund leakage, make better use of funds, reduce ghost teachers or teacher absenteeism, and decrease corruption in the purchase of school facilities, equipment, textbooks, and so on, leads to changes (see *Table 14*). Experience shows that this necessitates identifying who is responsible for the decisions involved, and at what level of the system, and the established or legal consequences for breaking the rules. For instance, decisions about teacher management may not rest

4. How to link open school data and accountability

with school authorities, but with local education authorities; in that event, actions should be directed towards the latter.

Table 14. Proportion of parents who reported using open school data to exert pressure on education or school authorities (by category of action)

Pressure on education or school authorities: Government (Gov.) or civil society-led (CS) initiative	Bangladesh		Indonesia		Philippines	
	Gov.	CS	Gov.	CS	Gov.	CS
Increase funding	—	57.1	49.2	56.6	23.2	31.4
Reduce fund leakage	—	—	36.2	43.4	19.6	17.6
Make better use of funds	—	14.3	60.3	54.2	33.9	33.3
Increase teacher numbers	—	33.3	28.5	38.6	14.3	9.8
Increase teacher qualifications	—	9.5	65.4	68.7	21.4	19.6
Eradicate ghost teachers	—	—	23.1	31.3	10.7	11.8
Reduce teacher absenteeism	—	19	36.2	41	19.6	19.6
Reduce corruption in the purchase/use of school facilities	—	9.5	45.4	54.2	28.6	37.2
Reduce corruption in the purchase/use of school equipment	—	9.5	42.3	43.2	8.9	9.8
Reduce corruption in the purchase/use of textbooks	—	23.8	40	45.8	14.3	15.7
Improve education quality	—	71.4	67.7	69.9	32.1	37.2

Source: Field survey data collected as part of IIEP-UNESCO's research on open school data in Bangladesh, Indonesia, and the Philippines.

4. How to link open school data and accountability

Reporting irregularities and ensuring that they receive a formal response requires setting up operational complaint mechanisms. Several open data initiatives, most of which are civil society-led, have opened channels to file complaints. Under the *Cek Sekolahku* project carried out by Transparency International Indonesia (TII), 'school agents' (i.e. students, parents, and teachers) voluntarily review and verify complaints. They receive training from TII and local district officers to follow an established protocol (see *Appendix 3*). Each complaint is resolved in under 10 days, and the conclusion is displayed on the school webpage, without disclosing names. *Mejora tu Escuela*, which encompasses 480,000 schools in Mexico, also enables users to file complaints online. Similarly, a hotline collected 186 complaints (e.g. about dysfunctional facilities, teachers' late arrivals) during the PMIU pilot phase in Pakistan.

BOX 23

Complaint mechanisms under Mejora tu Escuela in Mexico

The *Mejora tu Escuela* site includes an automated section called the 'School Window'. This section provides information on filing a complaint or sending a report to the competent authorities, and then following its progress. Through the site it is possible to report problems related to bullying, school infrastructure, lack of teachers, or collection of fees. When the user registers a report, the page requests their location, and automatically provides the contact details of the supervisor or comptroller from the Ministry of Education. In addition, when following up on their complaint, users receive information about the attention it received from the supervisor or comptroller's office. This is a useful indicator to assess the effectiveness of the different stakeholders involved in school problem resolution.

Source: Brito, 2019.

4. How to link open school data and accountability

Lessons for planners

- Consider which indicators can help monitor corruption risks in the sector.
- Give priority to data related to funding, teachers, facilities, equipment, and textbooks.
- Envisage a 'calibration approach' to avoid creating resistance.
- Formalize established consequences for breaking the rules.
- Set up an operational complaint mechanism to enable users to file complaints.

In summary: How to link open school data and accountability

Possible domains	Theories of change	Corruption concerns	Levels of impact
Financial accountability Management accountability Pedagogical accountability	Market model Rewards and sanctions model Collaborative planning imperative User participation models	Data highlighting corruption risks (e.g. budget, number of teachers, textbooks) Clarification of who is responsible for what Established consequences for breaking the rules Complaint mechanisms	Transparency: information posted; information posted and discussed Soft accountability: clarification of roles and responsibilities; enhanced social monitoring Hard accountability: establishment of consequences

5. Challenging open school data: What are the risks?

5.1. Over-simplification of complex issues

What are the risks?

As open school data reflect the reality of individual schools through the prism of a limited set of indicators, they tend not to capture the complexity of underlying processes and situations. Rabinowitz (2018) notes that, in Australia, when asked about the extent to which *My School* provides a balanced picture of their schools, the majority of school actors disagreed, with 39.47 per cent somewhat disagreeing and 21.05 per cent strongly disagreeing. Policy-making officials, when asked to comment on those figures, stated that school principals, in particular, consider that published data 'can't accurately represent all that is done' at school level. In particular, excessive emphasis on pupils' results, regardless of contextual factors, can generate improper conclusions, leading, for instance, to comparisons between districts or schools characterized by highly contrasted socio-educational indicators.

> "Schools are complex places that are hard to 'capture' through any data sets. Our principals tend to be passionate educators who know that what schools deliver is not solely based on a list of data. They change lives and My School can't accurately represent all that is done.
>
> A policy officer in Australia (Rabinowitz, 2018)

5. Challenging open school data: What are the risks?

> “If districts within the province differ on the basis of literacy rates, resource allocation, and economic prosperity, it is to be expected that such factors will have an impact on the indicators measured by the PMIU [Programme Monitoring and Implementation Unit], including [Literacy and Numeracy drive] scores. An interviewee underscored how problematic it would be to compare a district in the south, such as Chiniot, with a district like Lahore.

Source: Khan, 2018

What options exist to address them?

A few options exist to confront these risks. They include either encouraging users to make comparisons with national standards rather than other districts or schools, or allowing them to make comparisons only with schools that serve populations sharing a similar socio-educational background. This was the choice made by the Australian Curriculum Assessment and Reporting Authority (ACARA) in Australia when designing the Index of Community Socio-Educational Advantage (ICSEA), which combines information about family profiles, school remoteness, and proportion of indigenous population. Other important options to consider include mitigating the focus on pupils' results indicators, and trying to diversify data that document single dimensions.

Identified risk	How to address it
Over-simplification of complex issues	Mitigate the focus on pupils' results indicators Diversify data that document single dimensions Encourage comparisons with standard indicators Create a socio-educational index that allows for more meaningful comparisons between districts/schools

5.2. Misinterpretations and distrust of data

What are the risks?

According to the results of IIEP-UNESCO's research on open school data, a vast majority of interviewees did not associate any risks with the publication of school data (58.6 per cent of parents in Indonesia, 75.5 per cent in the Philippines, and up to 98.4 per cent in Bangladesh). However, among the risks identified, 'varied interpretations' or 'error in interpretation' (Parafina, 2018) were frequently evoked:

— Misinterpretations can be linked to the difficulties experienced by some users with understanding and interpreting figures correctly in the absence of basic statistical knowledge and expertise in educational management. Two types of data are of particular concern here – those related to pupils' results and those related to financial issues. In the Philippines, for instance, school principals expressed concerns about risks of 'possible misuse or misrepresentation of information, including on the school's financial situation' (Parafina, 2018). Similarly, in Bangladesh, assistant teachers indicated that providing information on school income and expenditure could generate chaos, as many guardians[16] are illiterate (Roy and Miah, 2018). In both cases, school authorities feared unexpected questions and resulting pressure.

16 Person taking care of the child.

5. Challenging open school data: What are the risks?

> “‘Varied interpretations’ or ‘error in interpretation’ … can create false impressions, offensive statements, and conflict among stakeholders. Possible intentional misuse also crops up as a risk, particularly in the context of a political agenda.

Source: Parafina, 2018

— Misinterpretations can also be intentional, particularly in the context of political opposition (e.g. low performance results may be used by the opposition to underline the failure of the administration to fulfil its mandate). This is especially the case in contexts where the information provided by public authorities is not trusted, and also where the media are used to sensationalize information and influence the general public. Khan (2018) explains that in the context of Pakistan, ‘a high performance of 90% against any indicator, such as student attendance, would still prompt many critics to focus on the missing 10%’.

> “Information from citizen-led initiatives, such as ASER [Annual Status of Education Report], is picked up by television, newspapers, and campaigns very quickly, whereas government-released information does not get the same traction with the media. It suggests that information published by the government is not trusted, which is linked to the public’s wider distrust of Pakistan’s political system and its leadership.

Source: Khan, 2018

What options exist to address them?

Such risks of misinterpretation can be mitigated through capacity development and training activities to help users become more school-data 'literate' (see examples of possible training topics by stakeholder in *Chapter 3, Section 3.4, Table 9*). Consultations with all stakeholders at different stages of the process, above all prior to the release of data, can also contribute to building trust and reducing scepticism, critical attacks, and defensive attitudes. In this respect, Roy and Miah (2018) note that school principals were less cautious than assistant teachers about the risks attached to financial data. Through their exposure to new concepts and approaches in meetings and training sessions, 'they had acquired greater understanding of the potential of opening up school data'.

Identified risk	How to address it
Misinterpretation of data	Make school authorities aware of the potential of open school data Build the capacity of stakeholders to analyse data and draw useful conclusions Work with a variety of partners ahead of data publication to build trust

5.3. School competition and possible stigmatization

What are the risks?

The decision to publish school data related to performance indicators, measured in particular through pupils' results, is seen by most stakeholders as a major incentive for parents to compare school results and enrol their child in schools displaying higher results. In Indonesia, for instance, one-third of

5. Challenging open school data: What are the risks?

school report card representatives and one-third of parents declared that the highest risk generated by open school data was parents choosing to enrol their child in another school (Felicia, 2018). Similarly, in the Philippines, about half of parents felt that open school data could influence their decision not to enrol their child in a given school (Parafina, 2018).

> “ The number of students who had to repeat a grade level should not be published because it will make our school look bad. And if the school looks bad, no one will want to come here.
>
> A group of students in Semarang, Indonesia (Felicia, 2018)

As a consequence, if not carefully monitored, open school data can result in increased competition among individuals and schools, the development of school marketing approaches, and the production of national or local league tables by the media. Some schools displaying high performance results may benefit from such developments. Cheng and Moses (2016) mention the case of private schools in Colombia that have responded favourably to requests made by the government to undertake performance reviews, with the expectation of attracting more students. However, schools displaying low performance results may suffer from stigmatization. Felicia (2018) cites several schools whose image and reputation might be damaged as a result of displayed data.

5. Challenging open school data: What are the risks?

What options exist to address them?

A number of measures are available to avoid these developments, which could otherwise result in long-term detrimental impacts (e.g. undue pressure on actors, 'teaching to the test' practices, exclusion of weak students to increase overall school performance). Such options include: reflecting on the best measures to evaluate educational quality; explaining that the aim of such data is not to foster competition but rather to engage parents and communities in meaningful dialogue with local education and school authorities, concentrating on school gain and growth rather than annual results; uploading data as they become available or through staggered releases rather than as a single package; developing a communication and media strategy to accompany data release; and celebrating schools that register high gain and growth rates.

> "ACARA should use its 'authoritative voice' to 'take the wind out of' attempts by individual journalists or media sources to report to the public about the performance of schools.

A community actor in Australia (Rabinowitz, 2018)

5. Challenging open school data: What are the risks?

BOX 24

ACARA's communication strategy for the release of school data

Prior to the annual release of *My School* data, stakeholder and media briefings are conducted to provide these groups with embargoed information, as well as information about a selection of schools around Australia that have achieved substantial gain/growth rates or high gain/growth in the National Assessment Programme – Literacy and Numeracy (NAPLAN) compared to previous years. On the release date, ACARA provides information about and commentary on the data to schools and other stakeholders electronically via email, social media, and a newsletter, and conducts media interviews as required. In the ensuing days, ACARA responds to enquiries from stakeholders and the media regarding the data and, where appropriate, data on particular schools. 'We work closely with schools needing improvement and "celebrate" rather than reward or punish schools. We "celebrate" by featuring the journey taken by some schools as case studies of success at an annual forum of school leaders (principals and deputy principals).'

Source: Rabinowitz, 2018.

Identified risk	How to address it
School competition and possible stigmatization	Review quality assessment measures Focus on gain and growth data Design a comprehensive communication strategy Work with media prior to data release Celebrate schools registering high gain and growth Publish data regularly as a routine (rather than as an event)

5. Challenging open school data: What are the risks?

5.4. 'Empowering the empowered'

What are the risks?

While open school data are made available to all, Gurstein (2011) argues that they tend to 'empower those with access to the basic infrastructure and the background knowledge and skills to make use of the data for specific ends'. In other words, open school data primarily serve the interests of parents with higher literacy levels, better access to the internet, larger possibilities regarding school choice, and stronger influence. As a result, there is a tendency towards 'elite capture' of information (Bruns, Filmer, and Patrinos, 2011). Conversely, those who are less educated, have a lower capacity to have their voices heard, and for whom participation represents higher opportunity costs, can find themselves at a disadvantage.

In fact, such assumptions are not entirely validated by the results of IIEP-UNESCO's research on open school data. Roy and Miah (2018) have not noted any significant variations in terms of access to data according to urban and rural categories or socio-economic group. They explain this pattern as follows: 'parents of children in urban areas spend less time at schools as they are more occupied with work-related activities compared to rural parents'. And they also highlight that civil society actions tend to minimize inequalities. One could also argue that disadvantaged groups may see additional value in information to which they would not otherwise have access, unlike more well-off groups.

However, under certain conditions open school data can clearly become a source of inequality, especially when they highlight differences between ethnic groups. Questions

surrounding this issue have been raised in countries such as Australia – i.e. whether data related to indigenous and non-indigenous groups should be presented separately. They have also been raised in India, where IIEP-UNESCO's researchers concluded that the publication of data across social groups or castes is not essential: 'this is because when more and more parents start using this information, they might take irrational decisions which could have an adverse impact on the public education system. For instance, parents who belong to a higher caste in the society might decide not to send their children to a school with a majority of students from a socially disadvantaged background' (Bordoloi and Kapoor, 2018).

What options exist to address them?

A number of actions can be undertaken to reduce the detrimental effects of open school data on equality, in the context of a growing datafied market. These include the use of different methods to disseminate information, with a view to reaching those least likely or able to access these data; the mobilization of civil society organizations to ensure the active and effective participation of lower socio-economic groups; and a prohibition on the release of ethnic-based statistics. Further details about related measures are described in *Chapter 3*.

5. Challenging open school data: What are the risks?

BOX 25

Ethnic-based statistics in France

In its decision of 15 November 2007, the Constitutional Council forbade the processing of data necessary for carrying out studies regarding diversity which infringe the principle laid down in Article 1 of the Constitution. As a result, the following were prohibited: (i) the processing of data of a personal nature indicating directly or indirectly the racial or ethnic origins of persons; and (ii) the introduction of variables of race or religion in administrative records. This applied to the National directory for the identification of natural persons. In its commentary, the Constitutional Council stipulated that the *a priori* definition of an 'ethno-racial classification' would be contrary to the Constitution.

Source: Translated from the Institut National de la Statistique et des Études Économiques (available at www.insee.fr/en/information/2388586).

Identified risk	How to address it
Empowering the empowered	Use different methods to disseminate information Mobilize civil society organizations to ensure the active and effective participation of lower socio-economic groups Prohibit the release of ethnic-based statistics

5. Challenging open school data: What are the risks?

5.5. Power imbalance, tensions, and frustrations

What are the risks?

The opening up of information occurs in contexts with long-established relationships between educational stakeholders that cannot be changed overnight. As a matter of fact, data publication can be feared by local and school authorities (and in some cases by school management committees [SMCs] as well, as described in *Box 26*), as it undermines their monopoly over information. Cheng and Moses (2016) refer to cases in Uganda, where 'some local governments … see constant feedback from the community as a threat to their authority', and others in Colombia, where school principals do not display school data, assuming 'that the public lacks the capacity to understand the information, or [they] regard public accessibility to information as a threat to their position'. Similarly, Bordoloi and Kapoor (2018) mention the 'unwillingness of public schools to welcome parental involvement'.

> "Sometimes they [the schools] say, 'we are afraid the public will misuse the information' … They worry too much about open data, they worry it would harm them.
>
> The leader of the Central Commission of Information in Indonesia (Felicia, 2018)

5. Challenging open school data: What are the risks?

BOX 26

Politicization of relationships at school level in Bangladesh

There is a provision to provide SMC membership to some local elites through nomination from their respective MPs [Members of Parliament]. In most of the cases, this provision creates possibilities to appoint their own partisan local political leaders. The political nexus between the elites and MPs empowers the SMCs in such a way that they eventually tend to empower teachers over the *Upazila* Education Officer (UEOs), which hampers internal monitoring systems and creates conflict between teachers and education officers. ...

As direct accountability to parents other than their representatives (i.e. the SMC) is not mandatory, school authorities are reluctant to place themselves in contexts where they are answerable to parents, such as parents' meetings or mothers' gatherings. Moreover, teachers generally aim to avoid unexpected questions from parents, and therefore work to manage these gatherings in such a way that the participants do not have an opportunity to raise or discuss their concerns. Instead, the teachers tend to use these gatherings to provide advice to parents, but do not offer opportunities for questions.

Source: Roy and Miah, 2018.

Two types of data appear to be particularly sensitive in this context. The first relates to the school budget. In reference to transparency boards (TBs), which display school financial transactions in the Philippines, Parafina (2018) explains that 'the budget is technically under the control and management of the school head. Such control can, when not properly monitored, result in the highly discretionary use of the fund by the

school head'. Providing information about the school budget can thus contribute to reducing possibilities for school principals to exert discretionary power. The second type of data relates to teachers' attendance and pupils' results. In Indonesia, for instance, some teacher unions opposed the publication of school-level information, viewing it as a tool 'mainly used to control us' (Felicia, 2018).

> "The [school report card] keeps them [school principals] on their toes.
>
> The Undersecretary of Education in the Philippines (Parafina, 2018)

On the other hand, communities, parents, and students may also be constrained by their 'lack of experience with popular democracy' (Bordoloi and Kapoor, 2018), or lack of experience of exchanging with local and school authorities, or even teachers. Dupain and Thu Phuong Nguyen (2019) cite 'evidence of intimidation, threats, and blunt refusals experienced by communities following complaints or requests for explanations' in an external assessment of the Link project in Ghana, while in Kenya, parents exhibited concerns that their child may become a 'scapegoat'. More generally speaking, obstacles to changing the political environment at school level can entail passive behaviours and generate frustrations from actors unable to act upon information.

What options exist to address them?

Changing long-established relations between public authorities, school principals, teachers, parents, students, and communities takes time. Still, a number of measures can help adjust the way in which responsibilities are shared. These include building the capacity of all stakeholders to take

collective decisions based on school data; ensuring strong facilitation of school/community meetings, so that 'a positive and constructive tone is maintained throughout the dialogue' (SPACO, 2004); ensuring that the identity of parents or students is kept confidential when making complaints; and compelling authorities to provide timely responses to requests (and transferring them to higher administrative levels when necessary).

Identified risk	How to address it
Power imbalances, tensions, and frustrations	Build the capacity of all stakeholders to take collective decisions based on school data Ensure strong facilitation of school/community meetings Ensure that the identity of parents or students is kept confidential when making complaints Compel authorities to provide timely responses to requests

5.6. Data privacy and tracking of individuals

What are the risks?

Open school data initiatives provide information aggregated at the institutional level, not the individual level. Under no circumstances should individual data related to school principals, teachers, or students be shared with the general public. However, there are cases where information provided can be easily attributed to certain individuals, at which point it becomes 'personally identifiable information' (see *Box 27*). One such case is that of small schools, with one-teacher schools being an extreme case. Data related to teacher absenteeism, or pupils' results, in such cases can easily be attributed

to a small number of people or even one person. These situations open up possibilities linked to the 'tyrannous side' of 'making the invisible visible' (Strathern, 2000), including hurting personal feelings and inducing forms of pressure and even humiliation.

> We are Javanese. We do want to be open, but we don't want to cross the line and be impolite. Transparency and accountability should take into account the culture factor. … For Javanese people, feeling is important and their feeling will be the basis for taking or not taking actions.

A district leader in Indonesia (Felicia, 2018)

BOX 27

Explaining the concept of personally identifiable information

Personally identifiable information (PII) includes any information that can be used, either alone or in combination with other information, to directly determine or ascertain the identity of an individual person. PII can include a person's name, Social Security number … other individual identification number … address, and so on. It can also include distinct pieces of information that, when combined, can identify an individual. In the case of student education records, that might include a student's grade level, date of birth, and/or other personal information (e.g. gender, race, or ethnicity). PII stored in students' education records is protected by federal and state law.

Source: National Forum on Education Statistics, 2016 (available at https://nces.ed.gov/pubs2016/NFES2016096.pdf).

5. Challenging open school data: What are the risks?

What options exist to address them?

Protecting data privacy in the context of growing national databases poses acute problems for public authorities that extend far beyond open school data. However, some basic rules that apply in other sectors should also be considered here. These include developing highly secure systems that protect individual data; preventing the disclosure of direct identifiers; finding a balance between detailed and aggregated information, with a focus on problem-solving; using 'a consistent minimum size for a data group when reporting aggregated data so that individual identities cannot be deduced from a small number of students' (National Forum on Education Statistics, 2016); making sure that teachers are 'not publicly humiliated in the name of accountability' (Roy and Miah, 2018); and finding alternative ways to deal with the issue of teacher absenteeism.[17]

Identified risk	How to address it
Data privacy and tracking of individuals	Establish strong security protocols and measures to protect individual data Prevent the disclosure of direct identifiers Find a balance between detailed and aggregated information Use a consistent minimum size for a data group when reporting aggregated data Find alternative ways to deal with the issue of teacher absenteeism

17 'In Kenya, opposition from the National Union of Teachers on this issue, and on the introduction of a teaching quality indicator, delayed the start of the project by a year. The NTA [National Taxpayers Association] eventually yielded and decided to find other ways of raising the issue of teacher absenteeism, including at the public meetings where [school report card] findings are discussed' (Dupain and Thu Phuong Nguyen, 2019).

5. Challenging open school data: What are the risks?

5.7. Security issues in fragile contexts

What are the risks?

Few security risks are attached to open school data. Nevertheless, two practical examples were evoked during the interviews carried out under IIEP-UNESCO's research on open school data. The first came from Pakistan, where one interviewee mentioned possible risks raised by the diffusion of school addresses together with the number of students enrolled, in reference to the attack conducted against a public school in Peshawar in 2014 (Khan, 2018). The second example came from the Philippines, where 'in areas with law-and-order problems … information about funds and resources could make the school a target for robbery' (Parafina, 2018).

BOX 28

Examples of data that should not be disclosed

The stakeholders identified at least four types of data the public sharing of which should be limited or regulated. These are: personal and private information (e.g. personal health condition, individual test results, guidance counselling records); information that poses a danger to people's lives or creates stigma; information that requires official authorization (e.g. based on [Department of Education] orders); and freedom of information (FOI) exceptions (e.g. for reasons of national security).

Source: Parafina, 2018.

5. Challenging open school data: What are the risks?

What options exist to address them?

According to the 1989 Convention on the Rights of the Child, 'States Parties shall ensure that the institutions, services and facilities responsible for the care or protection of children shall conform with the standards established by competent authorities, particularly in the areas of safety, health'. As a consequence, in fragile contexts, public authorities should carefully assess the sensitivity of school data in relation to security issues, and take the decision not to publish them when required by the prevailing situation.

Identified risk	How to address it
Security issues in fragile contexts	Identify data that can lead to security issues, and take the decision not to publish them when required by the context

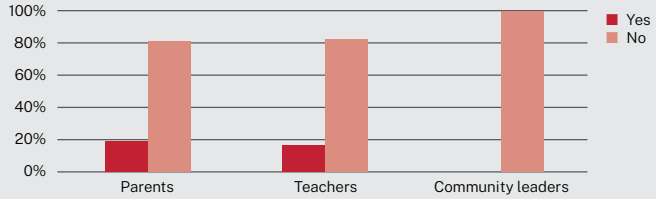
5. Challenging open school data: What are the risks?

IIEP-UNESCO's research on open school data

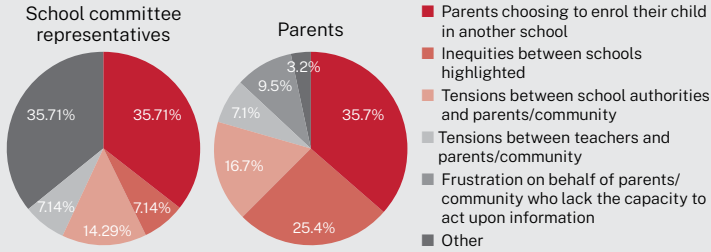
Do you see any risks with the publication of school data? The perspective of parents in Bangladesh, Indonesia, and the Philippines

Do you see any risks with the publication of school data? (%)	Bangladesh	Indonesia	Philippines
Yes	1.6	41.4	24.5
No	98.4	58.6	75.5

Are there data that should not be accessed? The perspective of stakeholders in the Philippines



What types of risk do you associate with school data publication? The perspective of parents and school committee representatives in Indonesia



Source: Field survey data collected as part of IIEP-UNESCO's research on open school data in Bangladesh (Roy and Miah, 2018), Indonesia (Felicia, 2018), and the Philippines (Parafina, 2018).

5. Challenging open school data: What are the risks?

In summary: Challenging open school data: What are the risks?

What are the identified risks?	How to address them?
Over-simplification of complex issues	Mitigate the focus on pupils' results indicators Diversify data to document one given dimension Encourage comparisons with standard indicators Create a socio-educational index that allows for more meaningful comparisons between districts or schools
Misinterpretation of data	Make school authorities aware of the potential of open school data Build the capacity of stakeholders to analyse data and draw useful conclusions Work with a variety of partners ahead of data publication to build trust
School competition and possible stigmatization	Review quality assessment measures Focus on gain and growth data Design a comprehensive communication strategy Work with media prior to data release Celebrate schools registering high gain and growth Publish data regularly as a routine (rather than as an event)
Empowering the empowered	Use different methods to disseminate information Mobilize civil society organizations to ensure the active and effective participation of lower socio-economic groups Prohibit the release of ethnic-based statistics

5. Challenging open school data: What are the risks?

What are the identified risks?	How to address them?
Power imbalances, tensions, and frustrations	Build the capacity of all stakeholders to take collective decisions based on school data Ensure strong facilitation of school/community meetings Ensure that the identity of parents or students is kept confidential when making complaints Compel authorities to provide timely responses to requests
Data privacy and tracking of individuals	Establish strong security protocols and measures to protect individual data Prevent the disclosure of direct identifiers Find a balance between detailed and aggregated information Use a consistent minimum size for a data group when reporting aggregated data Find alternative ways to deal with the issue of teacher absenteeism
Security issues in fragile contexts	Identify data that can lead to security issues, and take the decision not to publish them when required by the context

6. Practical guidelines for designing and implementing open school data initiatives

Making school data public is a useful step but not sufficient in and of itself to provoke significant changes in education systems. A number of other, practical steps must be undertaken both before and after publication to bring open school data to the attention of citizens.

The practical guidelines presented below aim to help planners of such initiatives to learn from and build on international experience in this field. For each of the steps involved, policy options are detailed, and tips, warnings, and a few suggestions for future steps are provided in boxes. A checklist provided at the end indicates which actor(s) need to be mobilized accordingly.

STEP 1. Design a clear open data policy framework

1. Review motivations for an open school data policy, clarify roles and responsibilities, and set expectations.

2. Link open school data with the information, planning, and management systems in place at school level and above, in order to amplify their usefulness and sustainability.

3. Formulate a theory of change, building on the collaborative planning imperative and user participation models.

Tip

Formally recognize students not only as beneficiaries but also as users of information with their own unique needs and interests, perspectives, and representation.

6. Practical guidelines for designing and implementing open school data initiatives

4. Pay due attention to the institutional adoption of participatory approaches to strengthen the use of open school data, building on the experience of civil society in this respect.

5. Allocate sufficient budgetary funds to support implementation of the open school data policy, including dissemination, and training and monitoring activities.

6. Integrate open school data into broader educational policies and reform frameworks.

STEP 2. Prioritize critical data with greater potential to generate positive change

1. Provide contextual information about school locations and socio-economic background, and include links to other sources of information (e.g. school development plans).

> **Tip**
> Be selective in the choice of data, focusing on critical aspects of schools.

2. Select meaningful data highlighting the current situation of schools, and focus on aspects of specific inputs, processes, or outputs with a propensity to hold public and school authorities accountable.

3. Accord priority to data that are of direct interest and utility for users (e.g. school budgets, infrastructure, or equipment), and which they can act upon.

6. Practical guidelines for designing and implementing open school data initiatives

4. Move progressively from input to output indicators, monitoring how well pupils are learning.

5. Consider indicators that are comparable over time and between schools, and that can measure in reference to national standards.

6. Include basic information about free or paid services offered by schools, eligibility criteria, amounts for stipends, responsibilities of school management committees (SMCs), and so on.

7. Consider incorporating data about current levels of parent participation and involvement in school operations.

8. Avoid information related to ethnicity or religion in order to minimize the risks of biased analysis and incorrect interpretation of data.

9. Identify data that can lead to security issues, and take the decision not to publish them when required by the context.

10. Consult teacher unions, parent associations, and media prior to data release, and discuss the results with them, as well as the most appropriate messages to be communicated to the general public on this basis.

Future step

Given the expansion of private schools in most countries, incorporate into the database private schools recognized by public authorities.

6. Practical guidelines for designing and implementing open school data initiatives

STEP 3. Set up robust information management systems

1. Plan the introduction of open school data initiatives in synergy with existing educational management information systems (EMIS), making sure that data are kept under the ownership of public authorities.

Future step

Design one presentation for computers, and another for mobile devices and tablets with simplified charts and tables.

2. Diversify sources of information, and minimize the number of administrative levels and individuals involved in data collection to protect data accuracy.

3. Organize technical training for local staff to teach them how to monitor data on a continuous basis and undertake data checks and audits.

4. Update the database in real time, several times a year, taking advantage of new opportunities offered by data digitization and synchronization.

5. Reduce time lags between data collection and publication, and disseminate information in a timely manner.

6. Empower school actors (including pupils) and community members in data collection processes.

6. Practical guidelines for designing and implementing open school data initiatives

7. Release data several times a year to lessen tensions generated by annual data releases.

8. Make sure online data are in compliance with norms of accessibility for the disabled.

9. Facilitate the indexing of open data platforms by internet search engines.

10. Make sure that individual data are fully protected, and that no tracking of individuals is undertaken using the information collected.

Warning

When integrating large databases (e.g. with teacher and/or student data), make sure that individual data protection is guaranteed.

STEP 4. Explore attractive ways to present data

1. Make sure data are accessible both online and offline in public areas where they are easy for all to view (e.g. at the school entrance and/or on the school noticeboard).

Tip

Maintain the technical accuracy of data and avoid oversimplification and consequent misinterpretation.

2. Provide explanations for statistical concepts to avoid confusion or misinterpretation.

3. Prevent the disclosure of direct identifiers, and use a consistent minimum size for a data group when reporting aggregated data.

6. Practical guidelines for designing and implementing open school data initiatives

4. Use simple language and attractive design, and incorporate tables and graphics that are easy for all to understand.

5. Use time series to encourage data analysis over time, highlighting the journey of schools over time.

6. Enable comparisons with national standards, and possibly also with other schools, but only those sharing similar socio-educational characteristics to avoid misinterpretation.

7. Give users the possibility of accessing different levels of data presentation, ranging from simple levels to more detailed and complex ones.

8. Share successful experiences of high-gain schools, and analyse how they were able to achieve their results.

9. Survey users, inquiring about the clarity of the information provided and its usefulness.

Future step

Develop interactive tools to allow users to move from simple to complex data presentations.

6. Practical guidelines for designing and implementing open school data initiatives

STEP 5. Make sure data are accessible to all

1. Send school report cards formally to all school principals.

2. Adopt legal provisions regarding the disclosure of school data, and monitor their enforcement by school authorities.

Future step

Introduce a separate venue for students, where they can ask about, comment on, or discuss issues related to open school data.

3. Conduct advocacy campaigns in local languages to make citizens aware of open school data, using radio, newspapers, public banners, school letters, and other media.

4. Transmit data directly to the public (e.g. through the distribution of leaflets or parent information sheets). In illiterate or semi-literate contexts, read the data out loud during community meetings.

5. Communicate and discuss data openly during SMC, parent, and/or community gatherings (particularly mothers' gatherings), and assist attendees in understanding, interpreting, and acting upon them.

6. Use small group discussions to ensure the participation of community members whose voices may not otherwise be heard.

7. Consider innovative means of data dissemination (e.g. multimedia, drama, folk songs, dance enactments) that can be understood by illiterate parents.

6. Practical guidelines for designing and implementing open school data initiatives

STEP 6. Strengthen stakeholder capacities to act on information

1. Enhance awareness among school administrators and teachers of the core principles of open school data and public right to information, and how to enforce them in practice.

Tip

Don't brief parents only about their duties; share information about the school and the importance of their participation in school activities.

2. Organize training for school principals, teachers, and SMC members on how to analyse simple statistics, and take evidence-based decisions on this basis.

3. Inform citizens about their rights and entitlements about education, as well as their rights to be informed, comment on information, and formulate proposals.

4. Provide instructions to SMC members on the importance of school-level data and take their concerns forward to school authorities and higher administrative levels, as needed.

5. With the support of civil society and community organizations, train SMC members and selected parents (e.g. members of mothers' groups) on the practical use of open school data, highlighting good practices.

6. Practical guidelines for designing and implementing open school data initiatives

6. Issue guidance on the organization of open school data meetings and subsequent follow-up to increase the responsiveness and accountability of school authorities to all stakeholders.

7. Use existing platforms such as community meetings as mediums to establish roles and responsibilities, and define follow-up actions collectively in the presence of all stakeholders.

8. Organize information sessions for all pupils (not just pupil leaders) about the importance of open school data, for instance at the beginning of the academic year.

9. Give due recognition to active individuals contributing to open data initiatives at school level (particularly mothers).

Tip

Use existing consultation and training structures to increase open school data sustainability.

6. Practical guidelines for designing and implementing open school data initiatives

STEP 7. Support efforts to improve accountability and fight corruption

1. Make sure that public dialogue feeds into school improvement plans and remedial measures, and ensure that it is integrated into school culture.

2. Identify areas that are most vulnerable to corrupt practices, and select data that can help shed light on them.

> **Tip**
> Integrate transparency and anti-corruption efforts into strategies or blueprints for school improvement efforts, rather than maintaining them as a separate programme.

3. Place the emphasis on input tracking to increase the impact of open school data on corruption-related issues (e.g. fund leakage or ghost teachers).

4. Make the objectives of an open school data initiative evolve over time from an information and communication tool to an accountability and anti-corruption tool.

5. Engage civil society members and communities to inquire into corrupt practices, such as fund embezzlement or misallocation of equipment or textbooks.

6. Clarify the consequences for corrupt acts, provide legal advice upon request, introduce hotlines and/or complaint mechanisms, and take sanctions whenever appropriate.

7. Ensure that the identity of parents or students is kept confidential when making complaints.

6. Practical guidelines for designing and implementing open school data initiatives

Checklist

Step	What	Who
1. Design a clear open data policy framework	Review motivations, clarify roles and responsibilities, and set expectations by formulating a theory of change in line with the planning cycle. Ensure buy-in, consider incentives and remedial measures, and build on participatory approaches.	Central education authorities
2. Prioritize critical data with greater potential to generate positive changes	Be selective and take into account data of relevance for users, with potential to hold public and school authorities accountable. Consider data related to input, process and outputs that are comparable over time and schools, but also linked to parental participation.	Central education authorities Teacher unions Parent associations Civil society
3. Set up robust information management systems	Build on EMIS to develop a database, and ensure the quality, comparability, and accuracy of data. Digitize and synchronize data to reduce errors and time lags. Consider the involvement of users in data collection.	Central and local education authorities
4. Explore attractive ways to present data	Set up online and offline channels to access data, paying attention to data understanding. Enable comparisons over time against standards and between schools sharing similar features. Imagine innovative communication media.	Central and local education authorities Civil society

6. Practical guidelines for designing and implementing open school data initiatives

Step	What	Who
5. Make sure data are accessible to all	Adopt legal provisions on school data disclosure and conduct advocacy campaigns. Use various communication channels and organize community gatherings to discuss data and strategies for improvements.	Central and local education authorities Media Civil society School authorities
6. Strengthen stakeholder capacities to act on information	Train school administrators, teachers, and SMC members, as well as selected parents, in the importance and use of open school data. Organize meetings with citizens to discuss possible actions.	Central and local education authorities School authorities SMCs Parents Pupils Communities Civil society
7. Support efforts to improve accountability and fight corruption	Place an emphasis on input tracking and corruption risks when selecting data. Engage stakeholders to inquire into illegal practices and introduce hotlines and complaint mechanisms.	Central and local education authorities Parents Communities Civil society Judiciary

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Glossary of terms

Access to public information: mechanisms by which citizens can exercise their right to access government information.

Accountability: holding public officials and service providers answerable for educational processes and outcomes.

Bottom-up process: a process by which the collection and distribution of school information is initiated at community level.

Citizen report card: summary results of a public service user satisfaction survey, intended to provide information for authorities and communities on service availability, delivery, and efficiency.

Community scorecard: collation of public service users' subjective assessments of inputs, processes, and outputs, collected through a participatory process involving schools and communities.

Corruption: systematic use of public office for personal gain, which has detrimental effects on access, quality, or equity in education.

Digitalization: transformation of administrative processes due to the intensive use of digital technologies.

Digitization: process of converting information or data into a computer-readable format using a sequence of discrete values.

Electronic government: use of new information technologies in the public sector for internal and external transactions.

Formal reward and sanction model: model by which education authorities use formal rewards and sanctions to promote school accountability.

Input tracking matrix: an intermediate product aggregating information on school inputs, processes, and/or outputs, involving community participation as part of the development of scorecards.

Glossary of terms

League tables: ranking of schools based on school performance results in standardized learning assessments.

Market model: model in which market incentives are used to promote school accountability.

National education standards: minimum standards to be achieved by schools in terms of inputs, processes, and/or outputs.

Open data policy: policy by which data generated by the government are made public in formats suitable for reuse and exploitation by citizens.

Open government: the opening up within the education sector of government data, processes, decisions, and control mechanisms to public involvement and scrutiny, with a view to ensuring inclusive and equitable quality education.

Open school data: all information about school inputs, processes, and/or outputs shared with the general public, either in paper or electronic format.

Participatory school report cards: school report cards developed by community members with the support of civil society organizations, focused on expressed needs.

Public participation model: model by which accountability is generated by public participation in school monitoring.

Report card: aggregation of information on educational inputs, processes, and/or outputs at school, district, or regional level, intended for internal and/or external use.

School community: people who make up an educational institution (i.e. school principals, administrative staff, teachers, parents, students, and other people who participate in school life).

School-education index: composite score based on several indicators (e.g. student learning outcomes and education

Glossary of terms

efficiency for each school), enabling users to compare schools and assess how a school evolves over time.

School improvement plan: plan prepared by school authorities in consultation with school management committees (SMCs) and also, in some cases, parents and community members, to improve school results. It includes objectives, activities, a timetable, the persons in charge, and monitoring indicators.

School profile: combination of quantitative and qualitative information that provides an overall picture of school operation and quality in a report format.

School report card: aggregation of information on a school's inputs, processes, and/or outputs, intended for internal and/or external use.

School scorecards: school scores presented through a numerical or letter scale based on a list of predetermined criteria selected to represent school performance or progress.

Scorecards: school performance or progress scores expressed on a numerical or letter scale based on a list of predetermined criteria.

Social accountability: approach through which citizens and/or civil society organizations participate in holding public and school authorities to account.

Standardized school report cards: document presenting the results obtained by schools on a set of indicators that remain the same across schools.

Top-down process: process by which the collection and distribution of school-level information is initiated by central authorities.

Transparency: information that is easy to understand and simple to access by all stakeholders on all flows of educational resources, processes, and outcomes.

Appendices

Appendix 1. Experiences in open school data initiatives worldwide

Focus on Africa

Country	Name of project/initiative	Implementors
Ethiopia	School performance review report (under Improved Girls' Learning in Rural Wolaita)	Link
Ethiopia	Community scorecard (under the Ethiopian Social Accountability Program)	World Bank (WB), UK Department for International Development (DFID), GIZ, Canadian International Development Agency (CIDA), Association of Netherlands Municipalities (VNG), local civil society organizations (CSOs)
Gambia	Community scorecard (under the Accountability and Participatory Monitoring and Evaluation Program)	WB
Gambia	Community report card (under the Participatory Performance Monitoring programme)	Ministry of Education, WB, Global Partnership for Education (GPE)
Ghana	School Performance Review	Link, Voluntary Service Overseas
Ghana	School Report Card, then Mobile School Report Card	Ministry of Education, US Agency for International Development (USAID), WB, United Nations Children's Fund (UNICEF)
Ghana	Community scorecard	Northern Ghana Network for Development

Appendices

Country	Name of project/initiative	Implementors
Kenya	School Report Card	CIDA, DFID, UK Aid, Hewlett Foundation, National Taxpayers Association (NTA)
Madagascar	School Report Card (under AGEPA then AGEMAD initiative)	WB, Agence française de développement (AFD), Aide et Action
Madagascar	School profiles (under Data Must Speak programme)	Ministry of Education, GPE, UNICEF, Hewlett Foundation, IIEP-UNESCO Dakar
Malawi	Community School Report Card (under SSIM, then INSPIRE)	Link
Namibia	School self-assessment	Ministry of Basic Education, Sport and Culture, Academy for Educational Development, USAID
Niger	School Report Card (under AGEPA)	Ministry of Education, WB, AFD
Nigeria	Citizen Report Cards	LITE
Rwanda	Community scorecard (under the Public Policy Information Monitoring and Advocacy programme)	DFID, Swedish International Development Cooperation (SIDA), Norwegian People's Aid and local non-governmental organizations (NGOs)
Rwanda	Community scorecard (under the Nine Year Basic Education programme)	Transparency International (TI) Rwanda
Tanzania	Community scorecard (under the Governance and Accountability Program)	CIDA, CARE, and local NGOs

Appendices

Country	Name of project/initiative	Implementors
Togo	School profiles (under Data Must Speak programme)	Ministry of Education, GPE, UNICEF, Hewlett Foundation, IIEP-UNESCO Dakar
Uganda	Community scorecard (under the Citizen Voice and Action initiative)	World Vision
Zambia	School profiles (under Data Must Speak programme)	Ministry of Education, GPE, UNICEF, Hewlett Foundation, IIEP-UNESCO Dakar
Zambia	Noticeboards (under Zambia Accountability Program)	British Council and Zambia National Education Coalition

Source: Dupain and Thu Phuong Nguyen, 2019; Cheng and Moses, 2016.

Appendices

Focus on Asia and the Pacific

Country	Name of project/initiative	Implementors
Australia	My School	ACARA
Bangladesh	School Report Cards	Directorate of Primary Education, Ministry of Primary and Mass Education
Bangladesh	TIB School Report Cards	Transparency International Bangladesh (TIB)
India	Unified District Information System for Education (U-DISE)	National Institute of Educational Planning and Administration
India	Annual Status of Education Report (ASER)	Pratham
Indonesia	Sekola Kita	Federal Government
Indonesia	Cek Sekolahku	Transparency International Indonesia (TII)
Pakistan	Programme Monitoring and Implementation Unit (PMIU)	Government of Punjab, World Bank
Pakistan	ASER	Pratham
Philippines	School Report Cards and Transparency Boards	Department of Education
Philippines	CheckMySchool	Affiliated Network for Social Accountability (ANSA)

Source: Rabinowitz, 2018; Roy and Miah, 2018; Bordoloi and Kapoor, 2018; Felicia, 2018; Khan, 2018; Parafina, 2018.

Appendices

Focus on Latin America

Country	Name of project/initiative	Implementors
Argentina	Reportes de escuela en Jujuy	Provincial public authority
Brazil	Basic Education Development Index	Federal Ministry of Education
Colombia	Índice Sintético de Calidad Educativa (ISCE)	Instituto de Evaluación (ICFES), Ministry of Education
Dominican Rep.	Sistema de Análisis de Indicadores Educativos y Alerta Temprana	Ministry of Education
Guatemala	Ficha Escolar	Ministry of Education
Mexico	School Report Card	Federal Ministry of Education
Mexico	Mejora tu Escuela	Instituto Mexicano para la Competitividad (IMCO)
Peru	Semáforo Escuela	Ministry of Education
Peru	Edu-Q Card	Edukans

Source: Brito, 2019.

Appendices

Appendix 2. Content of U-DISE school report cards in India

Data/information head	Content
1. General information	Basics: category (primary, middle, secondary, etc.) of school, management (private or public, aided or unaided), medium of instruction, year of establishment, recognition, and up-gradation Location of school: constituency and geographic indicators, and approachability by road Monitoring: number of inspections by block or cluster resource centre officers, academic inspections Financial grants: Sarva Shiksha Abhiyan or SSA (maintenance, development, teacher learning material [TLM]), Rashtriya Madhyamik Shiksha Abhiyan (civil works, annual grant, others)
2. Staff information	School staff information: number of sanctioned posts, number of permanent posts vis-à-vis contractual positions Teacher specific: total number of qualified teachers, number of graduates, gender, seniority (number of teachers above age 55), number of part-time teachers Training: teaching children with special needs, computer use, number of teachers who received in-service training Non-teaching assignments: number of teachers involved, average working days spent

Appendices

Data/information head	Content
3. School building, facilities, and equipment	School facilities: availability of computer-aided learning lab, number of computers, internet facility, science lab, boundary wall, furniture, playground, number of toilet seats (for boys and girls), CWSN-friendly toilet, library and number of books Number of rooms: number of classrooms, room for headmaster, number of classrooms that require minor and major repair Utilities: electricity connection, drinking water facility Facilities for the disabled: ramps, handrails for ramps Medical check-ups for students
4. Enrolment	Data on enrolment by grade (number of students): categorized by sex, caste status, religion (Muslim), repeaters, CWSN
5. Incentives	Number of textbooks and uniforms given to students during previous academic year (categorized by primary or secondary, gender, caste, and religion [Muslim])
6. Examination results	Number of students enrolled, appeared, passed, and passed with more than 60 per cent in the previous academic year, categorized by grade, gender, and caste

Appendices

Data/information head	Content
7. Proportions, percentages	Enrolment: percentage girls enrolment, percentage Muslim girls to Muslim enrolment, percentage Muslim enrolment, percentage Scheduled Castes (SC) girls to SC enrolment, percentage SC enrolment, percentage Scheduled Tribes (ST) girls to ST enrolment, percentage ST enrolment, percentage Other Backward Classes (OBC) enrolment, percentage repeaters to total enrolment, percentage change in enrolment over previous year Students and teachers: percentage of teachers with professional qualification, pupil/teacher ratio, student classroom ratio Transition rates (primary to upper primary, upper primary to secondary, etc.), flow rates (promotion and repetition) Percentage of classrooms requiring major repair
8. Right To Education Act (RTE)	Number of instructional days, school hours for children, school hours for teachers (categorized by primary, upper primary, secondary), when the academic session starts Textbooks: whether received, when they were received (month) Records: pupil cumulative records maintained, pupil cumulative records shared with parents Status of implementation of Continuous and Comprehensive Evaluation in school
9. Children from Economically Weaker Sections (EWSs) admitted (only for private unaided schools)	Data on number of students under 25 per cent quota as per RTE in the current academic year, and the same for the previous academic year

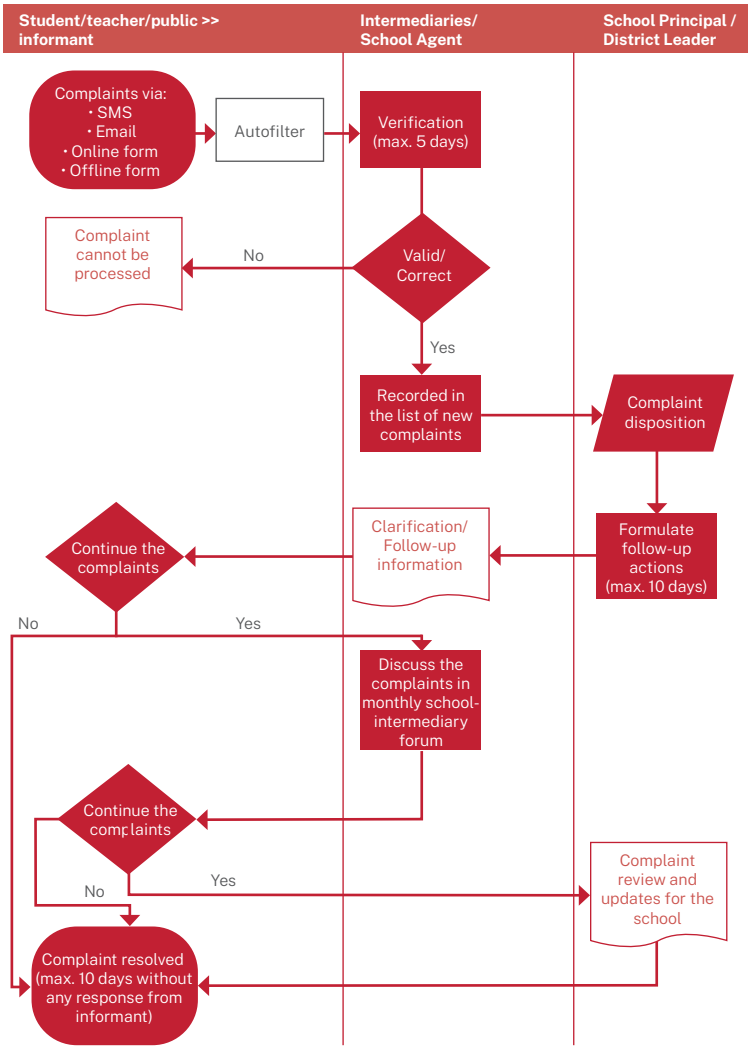
Appendices

Data/information head	Content
10. SMC (only for government and aided schools)	Data on when the SMC was constituted Data on members: number of representatives of local authority, parents, guardians, and parent–teacher association members (categorized by sex) Functioning: data on number of SMC meetings in the previous academic year, school development plan prepared by SMC, whether the SMC has a separate account, Indian Financial System Code
11. Special training (only for government schools)	Child specific: data on number of children who were enrolled for, were provided, and completed special training in the previous academic year (categorized by sex), percentage of children who completed special training in the previous academic year Other details: data on who conducted it and when it was conducted
12. Teacher learning Material (TLM)	Data on complete textbooks received, TLM, play material, games and sports equipment available for each grade (categorized by primary, upper primary, etc.)
13. Midday Meal Scheme (MDM) (only for government and aided schools)	Data on the source of, status of MDM, and status of kitchen-shed

Source: http://schoolreportcards.in/

Appendices

Appendix 3. Complaint handling procedures for Cek Sekolahku in Indonesia



Source: Cek Sekolahku website, http://ceksekolahku.or.id/media/3_SOP_English.pdf, quoted by Felicia, 2018.

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About the book

The number of countries providing the general public with access to educational data has grown rapidly over the past decade, encouraged by new information technologies and citizens' growing pressure for more transparency.

But while an increased amount of school-level information is shared in either paper or electronic format, several questions emerge: What are the most critical data to publish? What format is most likely to encourage communities to make use of them? How can we foster the active engagement of citizens? What actions are required to close the accountability loop? What are the major risks attached to the opening up of information?

This publication responds to these questions, unpacking the chain of actions required for developing open school data successfully. It argues that decision-makers and educational planners need to change from an administrative to a citizen perspective, learning from civil society experience in the area. Overall, the book demonstrates that by stimulating expectations and hopes, open school data may well contribute to substantial changes in power dynamics within the education sector.

About the author

Muriel Poisson is a Programme Specialist at IIEP-UNESCO, in charge of the Institute's project on 'Ethics and Corruption in Education'. She is responsible for research and training activities in this area, on subjects including public expenditure tracking surveys, teacher codes of conduct, transparency in the management of pro-poor incentives, academic integrity, open school data, and open government in education.

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