Case Study

United Nations
Educational, Scientific and
Cultural Organization

International Institute
for Educational Planning

India: Using open school data to improve transparency and accountability

Mridusmita Bordoloi and Varun Kapoor

India

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Presentation of the series: Ethics and Corruption in Education

Several 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. Studies have also shown a strong correlation between corruption and poverty: statistical regressions suggest that an improvement in the 'control of corruption' indicator by one standard deviation (two points) is associated with an increase of some $11,000 in gross domestic product (GDP) per capita (Sturm, 2013, in OECD, 2015). 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.

As a consequence, fighting corruption has become a major concern for policy-makers and actors involved in development. In view of the decrease in international aid flows and the increasingly stringent conditions for the provision of aid – due to growing pressure on public resources within donor countries and the pressure exerted by taxpayers on governments to increase transparency and accountability in resource management – fighting corruption is now regarded as a major priority on the agendas of countries and international agencies of development cooperation. The Drafting Committee of the World Education Forum expressed this concern in the following terms: 'Corruption is a major drain on the effective use of resources for education and should be drastically curbed' (UNESCO, 2000). In other words, to 'ensure inclusive and quality education for all and promote lifelong learning' – the fourth of the 2015 Sustainable Development Goals – the issue of corruption must be properly addressed.

A brief review of the literature highlights a number of global and sectoral attempts to tackle the issue of corruption. In the social sector, for example, several studies have been conducted on corruption in relation to the provision of healthcare services. 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 improve the functioning of the education sector to increase access to quality education for all will be undermined if problems related to corruption, which have severe implications for the efficient use of resources and the quality of education and school performance, are not being properly addressed.
- Lack of integrity and unethical behaviour within the education sector are inconsistent with one of the primary aims of education: to produce 'good citizens' who are 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, the UNESCO International Institute for Educational Planning (IIEP) launched a research project entitled 'Ethics and Corruption in Education'. Corruption is defined as the systematic use of public office for private benefit that results in a reduction in the quality or availability of public goods and services. The main objective of this project is to improve decision-making and the management of educational systems by integrating

governance and corruption concerns into methodologies of planning and administration of education. More specifically, it seeks to develop methodological approaches for studying and addressing the issue of corruption in education and to collect and share information on the best approaches for promoting transparency, accountability, and integrity in the management of educational systems in both developing and industrialized countries.

The project includes publications on topics such as school financing, pro-poor education incentives, teacher codes of conduct, textbook production and distribution, and academic fraud. It also features monographs on success stories in improving management and governance, as well as case studies that facilitate the development of methodologies for analysing transparency and integrity in education management.*

Within this framework, IIEP conducted research to explore the recent development of school report cards and to examine cases in which report cards prove especially successful in helping to improve transparency and accountability in education systems. This research included the preparation of case studies on the use of open school data in six countries from Asia and the Pacific – namely Australia, Bangladesh, India, Indonesia, Pakistan (Punjab), and the Philippines – as well as two state-of-the-art papers on Africa and Latin America.

This publication presents the case of India. It is based on interviews with key informants and a survey of 250 school-level actors. It compares the design and implementation of two major initiatives, namely the school report cards developed under the Unified District Information System for Education (U-DISE), which is government-led, and the Annual Status of Education Report (ASER) programme, which is citizen-led. It investigates and compares the type of information published, those who publish it, and how it is accessed. It highlights the most critical data for improving transparency and accountability, and explores how different categories of stakeholders access the information and utilize the information. It also identifies the conditions required to improve transparency and accountability in the education system, and the limits of such processes.

It concludes by highlighting the limited extent to which India's data-rich education system has effectively contributed to improving transparency and accountability. The publication ends with a series of recommendations including: building interoperable, real-time databases to enable ease of decision-making; strengthening online and offline mechanisms for sharing data with the public, particularly at the school level; strengthening the link between U-DISE data and school-level planning; and consolidating grievance-redressal mechanisms.

IIEP is very grateful to Mridusmita Bordoloi and Varun Kapoor for their valuable insights; accordingly, it would like to thank them together with the Accountability Initiative. It would also like to thank all the people interviewed as part of this research and those who gave their time to participate and collaborate in the fieldwork.

Jacques Hallak** and Muriel Poisson***

* An information platform entitled ETICO has been created within the framework of the project and can be accessed at: http://etico.iiep.unesco.org

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Foreword

The number of countries providing the general public with access to school data has grown rapidly over the past decade, encouraged by the development of information technologies and under the pressure of social movements demanding the right to information and greater accountability in service delivery. A wide variety of initiatives have been developed to share school-level information in the form of school report cards. These provide key information about a school, including student enrolment, funding, number of teachers, teacher qualifications, pupil/teacher ratios, conditions of school facilities, textbooks, and student achievement. In some countries, governments have taken the lead in disseminating such data, relying on existing educational management information systems. Elsewhere, civil society organizations have taken the initiative to produce school report cards for selected schools, placing the emphasis on community engagement in data collection and use.

In recent years, the Asia-Pacific region in particular has become a hub for increased initiatives for access to information and has called for more transparent and accountable government. Australia, New Zealand, and Singapore have pioneered innovative and comprehensive uses of new technologies with the launching of *My School*, Education Sector Indicators, and the School Information Service respectively. Grassroots movements in India have stimulated the passing of Right to Information Acts in many states during the last decades; furthermore, initiatives aimed at displaying information through district report cards and school boards have spread throughout the country. Bangladesh now has more than a decade of experience in developing school report cards with the support of civil society, and the Check My School initiative has spread from the Philippines to Cambodia and Indonesia. These are but a few examples which highlight the opening up of school data to the general public throughout the region.

It is widely acknowledged in the literature that public access to information is one of the most efficient means of achieving better transparency and accountability in the education sector. It enables education authorities not only to better monitor educational progress and outcomes, but also to detect bottlenecks in the system and take adequate measures to address them. It also enables school communities to check whether they have received all the resources they were entitled to, in terms of funding, teachers, textbooks, and so on. Finally, it enables parents to exert pressure on school authorities and public officials to improve service delivery. Nevertheless, experience shows that the link between data, transparency, and accountability is not straightforward in practice, and needs to be unpacked carefully.

Indeed, while open school data are important, the information published is not always the kind most urgently needed to improve accountability in the management of education systems. In addition, when data are available to the public, they are not necessarily in easily accessible formats, and people are often unaware of how to access and utilize those data. Moreover, sharing best practices in this area has not yet been carried out in a useful and systematic manner. Essential to addressing these issues is an increased dialogue between key stakeholders, that is to say government education officers and planners responsible for data collection and dissemination, civil society organizations (CSOs) involved in the empowerment of citizens through information, and parent representatives.

This raises a number of questions:

- What data are most relevant to improving transparency and accountability in the system?
- What format is most likely to encourage school communities to make better use of data?
- What can be done to ensure that the data provided benefit more than a small proportion of the population, allowing all the community to make informed decisions?

- What mechanisms need to be put in place to ensure that parents and communities can make proper use of data?
- What incentives are needed to help stakeholders improve their practice?

Such questions can be seen as all the more relevant as the amount of school data – and the number of countries adopting school report cards – continues to grow. They are also timely, as there is still a lack of robust assessment of the actual efficacy of such initiatives: the 'lessons learned' so far rely predominantly on desk reviews and anecdotal evidence. They are also critical for ascertaining whether the conditions for the usefulness of open school data are properly taken into account, together with other factors critical for improving transparency and accountability in a sustainable way.

In this context, the UNESCO International Institute for Educational Planning (IIEP) initiated a research project in 2014 on 'Using open school data to improve transparency and accountability in education', so as to compare the motivations, purposes, audiences, data sources, contents, uses, and impacts of school report cards developed in different regions of the world.

The overall goals of this programme are to: develop an evidence base for the most critical data needed and the most effective open education policies for improving government transparency and accountability in education; help decision-makers and educational managers make informed decisions about the design and implementation of open education data policies, so as to promote transparency and empower citizens to fight against corruption; build the commitment and capacity of civil society organizations, media representatives, in addition to education officials in charge of access to information, to work together to develop access to more practical, effective, and usable educational data.

The research addresses the necessary conditions for enabling open education data to promote transparency and accountability in education. It pays particular attention to data published at school level through school report cards, in the belief that the school level is particularly critical for encouraging citizens to make the best use of the information provided and to act upon it. It analyses the chain of action needed for developing school report cards successfully at each of the steps involved in their design and implementation.

The main assumptions underlying the research are as follows: First, open data initiatives are powerful tools to improve transparency, hold schools accountable, and reduce corruption risks in education. Second, government-led initiatives are less likely than citizen-led initiatives to respond to users' needs, engage them, and generate real impact, since they are often more supply- than demand-driven. And third, all users do not benefit equally from open data initiatives. In the absence of adequate safeguards, such initiatives can enhance inequalities and result in 'elite capture of information'. Within this framework, the research attempts to address and document the following questions:

- What is an enabling legal framework for access to information initiatives in the countries under analysis?
- What are the most critical data for revealing corruption in different domains such as school funding, infrastructure procurement, or school and teacher management?
- Which information model has proven to be more effective: supply-driven (for top-down management) or demand-driven (for bottom-up control)?
- How can we ensure that the information is actually being used by the target audiences in the desired manner?
- What is an effective setup that will facilitate participation by the general public?
- How can demand for information be created among a desired range of audiences?
- What successful actions following the publication of school-level data have a real impact in improving transparency and accountability in the education sector?
- What are the potential adverse effects of access to information on the existing education systems?

The research focuses on countries from Asia and the Pacific which have developed innovative projects during recent years in the area of open data in education, including Australia, Bangladesh, India, Indonesia, Pakistan (Punjab province), and the Philippines.[1] In each participating country, national researchers have analysed in detail these initiatives' aim to share access to school data with the general public in order to improve transparency and accountability and fight corruption in education systems. They have compared, as far as possible, two types of initiative, one that is government-led (the collection and distribution of school-level information is initiated by the central authority of the country or of a jurisdiction), and one that is citizen-led (the collection and distribution of school-level information is initiated at the community level). The following activities were accordingly undertaken at country level:

- The analysis and collection of relevant documentation and laws related to the right to access information, including legislation specific to the education sector, if any;
- A review of the list of education data shared with the public at all levels of the system, but particularly at the school level, produced and disseminated by government authorities and also through large-scale civil society initiatives;
- A series of semi-structured interviews with key informants (people in charge of the implementation of the right to information legislation, education sector managers, actors from civil society organizations involved in the empowerment of citizens though public access to data, members of parents' associations, and representatives from the media);
- 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 education data, considering socio-economic, educational, and geographical factors. Informants included head teachers, teachers, parent–teacher associations, parents, and community leaders.

At the school level, field surveys helped to identify the type of information published, those publishing it, and how it is accessed; the most critical data for improving transparency; how different categories of stakeholder access and use the information; the conditions required to impact the level of transparency and accountability in the education system; and the limits of such processes, particularly from a legal perspective. Their main findings are analysed in detail in a set of case studies published by IIEP in its series, 'Ethics and corruption in education'. This report presents the results of the case study conducted in India.

It is hoped that the results of this work will help build the capacities of education officials, as well as civil society representatives in charge of the management of school data, to develop access to practical, effective, and usable open data in education; to encourage further dialogue and cooperation between stakeholders within individual countries and in the wider region with respect to the conditions in which such initiatives can improve accountability in education; and beyond this, to enable promoters of public access to information based in different regions of the world to learn from the success and limits of the experiences of other regions.

IIEP would like to thank Mridusmita Bordoloi and Varun Kapoor for their valuable contributions and the interviewees for sharing their knowledge and experience. It would also like to express its gratitude to the high-level decision-makers from the six countries under review, who agreed to discuss the main findings of the research during a policy forum organized by IIEP in Manila, Philippines, from 24 to 26 January 2018.

Muriel Poisson, Programme Specialist, IIEP

1. The six case studies have been published as part of the IIEP Series on Ethics and Corruption in Education, and are available on the Institute's publication website: www.iiep.unesco.org

This study was prepared under the supervision of Muriel Poisson, Programme Specialist at the International Institute for Educational Planning (IIEP-UNESCO).

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Abbreviations

ASER	Annual State of Education Report
AWP&B	Annual Work Plan and Budget
BRC	Block Resource Centre
BRCC	Block Resource Centre Coordinator
CIC	Central Information Commission
CRC	Cluster Resource Centre
CRCC	Cluster Resource Centre Coordinator
CSO	civil society organization
CWSN	children with special needs
DCF	Data Capture Format
DIET	District Institute of Education and Training
EMIS	Educational Management Information System
GOI	Government of India
IFSC	Indian Financial System Code
MDM	Mid-day Meal
MHRD	Ministry of Human Resource Development
MIS	management information system
NAS	National Achievement Survey
NCERT	National Council for Educational Research and Training
NER	net enrolment ratio
NIEPA	National Institute of Educational Planning and Administration (Previously NUEPA – National University of Educational Planning and Administration)
OBC	Other Backward Classes
OMR	optical mark reading
PPS	probability proportional to size
PRERNA	Program for Result Enhancement, Resource Nurturing, and Assessment
RTE	Right to Education
RTI	Right to Information
SC	Scheduled Caste
SDMIS	Student Database Management Information System
SHG	self-help group
SIS	State Implementation Societies
SLAS	State Learning Achievement Survey
SMC	school management committee
SSA	Sarva Shiksha Abhiyan
ST	Scheduled Tribe
TLM	teacher learning material
U-DISE	Unified District Information System for Education
UT	union territory

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Executive summary

It is widely acknowledged that India's school system suffers from severe accountability deficits. High levels of teacher absenteeism and poor learning outcomes are two manifestations of this. One response to this accountability deficit has been the proliferation of data on school systems. These databases have emerged through a combination of government and civil society action. The single largest database currently available on school education in India is Unified District Information System for Education (U-DISE), which is a government-led initiative and covers nearly all schools in the country. U-DISE annually collects information on a wide range of school-level input indicators and the data are placed in the public domain. Another important data source is the National Achievement Survey (NAS) conducted by the National Council of Educational Research and Training (NCERT), which assesses grade-specific learning levels of students based on sample surveys. Government databases apart, civil society actors too have been active in collecting data on school education. The most influential of these has been Pratham's Annual Status of Education Report (ASER) – a national-level annual survey of learning outcomes of children.

Despite this proliferation of data, relatively little is known about how data are used and to what extent this has enabled citizens and government itself to strengthen accountability. With over 1.5 million schools in India, the education ecosystem consists of a range of different actors – including government, private entities, parents and community, and civil society organizations. All these actors work with some form of data. Yet, while numerous studies have tried to understand the relationship between transparency and citizen engagement for improved service delivery, very few have tried to understand how school-level data in India are accessed and utilized by different stakeholders. This study attempts to fill this gap by focusing primarily on U-DISE, while also looking at potential usage of ASER and NAS results for bringing in transparency and accountability.

This study collates experiences of users of data at different levels to understand the bottlenecks and challenges to achieve transparency and accountability in India's public education system. Detailed field surveys of parents and head teachers in government schools were conducted in three districts in three different states of India. Interviews were also conducted with education administrators at national and subnational levels, civil society organizations (CSOs), and media.

Key findings

The pathway for accountability through U-DISE data is the public-participation model. At the core of the accountability structure in government schooling system in India are the parents. The accountability model is designed to start with the school management committee (SMC) (of which parents are members), and accountability of the school system is designed to be responsive directly to the SMC. Ideally, in such a type of accountability model, the public exerts pressure on schools to perform by regularly monitoring performance and may provide suggestions or make other contributions to achieve better learning outcomes. U-DISE data have the potential to be used as a key information base by both government and citizens for demanding accountability from the schools. Government attempts to make these data public in three broad manners – first, through the U-DISE online portal; second, by instructing schools to put it up for public view in their notice boards; and third, by asking schools to share it with SMC members. However, apart from putting the data online, instances of the other two routes of making the data public are rare.

The stakeholders' perceptions pointed to a number of weaknesses in data collection, verification, and usage process. There is a gap of around a year between schools submitting

the filled-in U-DISE data and the school report cards being actually available online for the public. Moreover, despite detailed verification and validation processes in place, the scale of the process and strict timelines also result in data quality issues.

While the Sarva Shiksha Abhiyan (SSA) – the primary vehicle for delivering public elementary education in India – envisages bottom-up, decentralized planning through the creation of school development plans (SDPs) by each school, in practice U-DISE has come to replace SDPs as the main source of identifying and aggregating financial requirements of a school. For the central government, U-DISE acts as the key information base for determining funding requirements proposed by states. However, there are gaps observed between budgets proposed and what eventually gets approved and released.

U-DISE is designed to capture the current status of schools and does not allow for school-level prioritization. Moreover, U-DISE data are collected on a particular date of the year, so it is not dynamic in nature. Again, it does not capture indicators on learning outcomes. This often results in states creating parallel real-time management information systems resulting in different databases, independent of one another.

From the perspective of citizen engagement, usage of U-DISE data by parents and the community in general is limited. School data in general, and U-DISE school report cards in particular, are rarely used by parents and community members as an information base for either selecting schools for their children or demanding accountability. Around 90 per cent of the parents being surveyed are not aware of U-DISE school report cards. Again, even though almost all the teachers are aware of the U-DISE data collection process, only 10 per cent are aware of school report cards available through the online U-DISE portal.

There is limited effort with respect to last-mile dissemination of U-DISE data. The government has limited itself to sharing data across key indicators online. For a country where illiteracy is high and the internet remains inaccessible to a significant proportion of the population, larger public access is not possible without implementing other modes of data sharing. A majority of parents (90 per cent) mentioned that they never attended any training or received any kind of guidance either in the schools or in the community regarding potential usage of U-DISE school report cards.

There are a number of factors that need to work together in order to create an accountable public education system. The study observes a number roadblocks in achieving a closed accountability loop, such as limited access to data by citizens, lack of knowledge about rights and entitlements, a lack of collective voice and action, limited provision for enforceability, and the absence of a formal grievance redressal mechanism for parents.

Recommendations

Strengthening the internal accountability relationship

Strengthening the link between performance and the intergovernmental fiscal transfer system: At present, financial accountability of schools towards government is assessed based on the expenditure rather than achievement of targeted goals in U-DISE. To address this gap, it is important to restructure the fiscal transfer system in a manner that links budget allocations and expenditure management to performance on key indicators. However, such a fiscal transfer system should be designed so that it is linked to the right indicators. The recent commitment by the Government of India to undertake an annual NAS at the district level offers an opportunity to do just this. Through the NAS, the SSA could restructure its planning and budgeting system, which links some proportion of funding to state government to performance on learning outcomes.

Building interoperable, real-time databases to enable ease of decision-making: Data on education are collected by a number of different departments, and these databases function in silos, independent of one another. This creates problems including intergovernmental coordination, overloading data collectors at the front line, and data quality. Crucially, the presence of multiple databases serves to obfuscate accountability. It is important to ensure interoperability across databases, which will strengthen the quality of data and comparability and avoid duplication. Most importantly, this will create conditions for affixing accountability at the right level of government. Using technology to reduce time lags between data generation and making them public is equally important.

Strengthening accountability to citizens

Strengthening online and offline mechanisms for sharing data with the public: It is extremely important for the Ministry of Human Resource Development (MHRD) and the National Institute of Educational Planning and Administration (NIEPA) to introduce other modes of dissemination of U-DISE data to the citizens and not restrict it to the online portal. In order to realize the transparency and accountability potential of education data, enforcing this provision is critical.

Comprehensibility and presentation of data: Most of the teachers who have seen U-DISE school report cards felt that the way the information is currently presented might not be easy to comprehend for semi-literate parents. Moreover, school report cards have a host of information, not all of which may be relevant to all stakeholders. Simpler versions including data charts and visualizations could be created to make them more user-friendly and accessible to a larger audience.

Awareness building: There should be efforts to make people aware of the very existence of U-DISE school report cards. These could include advertisements in newspapers, radio, and television in both English and local languages; community-level training on how these data can be used; and regular social audits of U-DISE data in SMC meetings. The general public should also be made aware of their rights laid out by the existing relevant laws in place, such as the Right to Education Act (RTE) and the Right to Information Act. CSOs and non-governmental organizations can take a lead on this.

Introduction of grievance redressal mechanism: A formal route for registering complaints/concerns regarding school-related issues by parents and community members will enable and embolden stakeholders to address corruption, to weed out negligence, inefficiency, discrimination, and other ills that plague the system. In the absence of such a mechanism, even those with information might be powerless. This would require a policy-level change, more specifically, an amendment in the exiting RTE.

1. Introduction

It has been widely accepted in policy circles as well as the research community that despite significant improvement in access to education in low-income and developing countries, the learning levels of children have been much lower than expected. India is no exception. Despite significant progress in achieving access to public education and achieving near universal enrolment, quality education still remains a challenge.

As Read and Atinc (2017) note, various research studies on understanding the deficit in quality education have found that there is limited correlation between input-based provisioning – textbooks, infrastructure, and so on – and learning levels. For these extra resources to have any significant impact, they need to be paired with systemic changes in the architecture of education service delivery and accompanying accountability structures.

In fact, it is now widely acknowledged that one of the most effective approaches to achieving quality education is holding schools and the government accountable for student learning levels. School accountability – the process of evaluating school performance on the basis of student performance measures – has the potential benefit of aligning effort with stakeholders' goals and providing information for improvement. Information is therefore one of the key building blocks for strategies that attempt to tackle weaknesses in service delivery and accountability at the school level.

India has over the years made a number of interventions to improve access to information at the school level. However, as with other developing countries, there is a significant gap between access to information and the use of information by stakeholders as a tool for demanding accountability. Issues such as lack of awareness about the existence of such information, low literacy levels, and lack of incentives to use such information need to be addressed so that data or information help achieve an accountable education system and thereby achieve the overall objective of learning.

1.1 Background information on India

India is the second most populous country in the world with a population of more than 121 billion, spread across 36 states and union territories, 640 districts, 7,933 towns and more than 600,000 villages. It is also one of the most diverse countries in the world, with several social groups, religions, languages, and communities. The country's economy has experienced one of the highest growth rates across the globe over the last 15 years. While the size of the economy has grown, poverty and income inequality still remain major hurdles in achieving overall social well-being.

The education sector in India has gone through significant changes over the past decade and a half. In 2001, the Government of India (GOI) launched its flagship elementary education programme called the Sarva Shiksha Abhiyan (SSA), with the aim to provide universal primary education to children between the ages of 6 and 14 years. The SSA is now the primary vehicle for implementing the Right of Children to Free and Compulsory Education Act in India. However, while India has made significant progress in age-specific enrolment ratios[2] as well as the net enrolment ratios (NERs),[3] learning outcomes remain undeniably poor. This is a serious issue for India's public education space, since approximately 80 per cent of all schools at the elementary stage are government run or government aided (see *Box 1*).

2. Percentage of children enrolled at elementary level in the 6-to-10-years age group was 91.6 per cent for 2015/2016 (U-DISE, 2016).
3. NER at primary level increased from 84.5 per cent in 2005/2006 to 87.3% in 2015/2016 (U-DISE, 2016).

One of the paradoxes in India's education system is that while both the union[4] and state governments invested in building schools; hiring teachers; and providing free textbooks, uniforms, and midday meals, the net enrolment in government schools has been decreasing, while that of private schools, particularly at the primary stage, has been increasing (ASER Centre, 2015). Poor learning outcomes are widely stated as one of the key reasons for this shift. Alongside government investment, the participation of private education providers has also increased considerably with numerous private educational institutions coming up across towns and villages to meet the rising demand. At the primary and secondary levels, India currently has a large private school system complementing government-run schools. As per statistics released by the Unified District Information System for Education (U-DISE), private schools as a share of total number of schools providing elementary education in India increased to 23 per cent in the year 2014/2015 from 19 per cent in 2007/2008.

Box 1. Indian school education system: Types of management

- Government schools: Schools fully managed by government, either state or central government.
- Local body schools: Schools that are managed by local bodies (as defined in Article 243 of the Constitution) such as panchayats in rural areas, municipalities in urban areas, cantonment boards, town area committees, and any other bodies of local self-government constituted under a law.
- Private aided schools: These schools are owned by private management. But the rules and regulations they follow are the same as those of the government schools. The curriculum, study materials, syllabus, examinations, and so on are prepared according to the government rules.
- Private unaided schools: Schools fully owned and controlled by private management.
- Madrasas: Madrasa is an institution of learning where Islamic sciences including literary and philosophical subjects are taught along with subjects such as mathematics and science. Although many madrasas in the country have been recognized by government, there are still a considerable number of unrecognized madrasas.

1.2 School-level data in India: U-DISE

Currently, the GOI collects information on various aspects of schools covering all government, government-aided and private schools across the country. Known as U-DISE, it is the single largest effort to create an Electronic Management Information System on key school-level indicators for India. This school-based statistical system has been designed and developed by the National Institute of Educational Planning and Administration (NIEPA) – a premier organization dealing with capacity building and research in planning and management of education, set up by the Ministry of Human Resource Development (MHRD). U-DISE provides an important basis for planning and measuring progress in school education over a period of time. It is the primary source of information on the basis of which Annual Work Plans and Budgets are prepared by states for financing and implementing different activities under SSA. Based on the data collected annually by U-DISE, school report cards are generated for every school in India and they are available online for free.

Even though the bulk of this report focuses on U-DISE – being the only source of school-level data in India – two other data collection initiatives that publish indicators on learning outcomes and have all-India coverage are also discussed as part of this report, notably because both of these initiatives attempt to fill a large data gap that currently exists in U-DISE, by measuring learning outcomes. One such initiative is the Annual Status of

4. The terms 'union' and 'central' for governments have been used interchangeably.

Education Report (ASER) survey conducted by the ASER Centre, an independent unit within the larger network of the non-governmental organization Pratham. The second initiative, known as the National Achievement Survey (NAS), is again a sample survey conducted by the National Council for Educational Research and Training (NCERT)[5], a government body that measures grade-specific learning levels. However, it is important to highlight that neither of these initiatives provides school-level data.

1.3 Rationale for conducting the research

In India's case, since there is no initiative led by civil society that publishes school report cards, this research primarily focuses on the government-led initiative (U-DISE). There are three main objectives of the study. First, to develop an evidence base of the most critical data needed and effective education policies to improve government transparency and accountability in education. Second, to analyse the mechanisms through which parents and community members either use or could possibly use school-level information to demand accountability in the public education system. Finally, to suggest possible steps that can be taken to strengthen this link between users and generators of school-level data. It is our endeavour that the study will help decision-makers and educational managers make informed decisions while designing and implementing open education data policies, in order to promote transparency and empower citizens to demand accountability in the delivery of education services.

1.3.1 Methodology used

The collection of data and information for the case study in India is done through a series of semi-structured interviews with key informants, as well as surveys of and interviews with around 250 school-level actors. The semi-structured interviews were conducted with 11 key informants at the national and subnational levels as presented in *Annex A*. The aim of the school survey was to collect the perspectives and suggestions of parents on the publication of school data and to understand the perspective of teachers including head teachers. The population of the sample was children enrolled for the current academic year (2017/2018) in public schools where the government-led initiative (U-DISE) is implemented.

Selection of districts

In India, data have been collected from three contrasting districts selected from three different states (see the map of the states covered in the survey in *Annex B*). The three states are first ranked based on a combination of indicators: (1) percentage of children in Grade 3 who can read Grade 2 level text, (2) percentage of children in Grade 3 who can do at least subtraction, (3) NER – upper primary, (4) transition from primary to upper primary; (5) percentage of Grade 5 students who scored more than 50 per cent in reading comprehension, and (6) percentage of Grade 5 students who scored more than 50 per cent in environmental studies. *Table 1* refers to the values of these indicators for the three states. Himachal Pradesh is observed to be at the top among the three states in terms of all six indicators. While Rajasthan is ranked second in four out of six indicators, Madhya Pradesh is ranked third in four out of six indicators. Therefore, the ranking of the three states in terms of educational achievement is: Himachal Pradesh (Rank 1), Rajasthan (Rank 2), and Madhya Pradesh (Rank 3).

Once the states were selected, one district from each was chosen after comparing them in terms of educational outcome variables based on district-level U-DISE data

5. NCERT is an apex resource organization to assist and advise the central and state governments on academic matters related to school education. It provides academic and technical support for qualitative improvement of school education and undertakes programmes related to research, development, training, extension, international cooperation, publication, and dissemination of information.

available for the year 2015/2016. Accordingly, we selected the following three districts: (1) high performance in education indicators: Solan (state: Himachal Pradesh), (2) middle-level performance in education indicators: Jaipur (state: Rajasthan), (3) below-average performance in education indicators: Sagar (state: Madhya Pradesh).

Table 1. Ranking of states in terms of education indicators

State	ASER survey (Rural), 2016				U-DISE, 2015/2016				NAS, 2014, NCERT			
	Rank	Percentage of children in Grade 3 who can read Grade 2 level text	Rank	Percentage of children in Grade 3 who can do at least subtraction	Rank	NER –upper primary	Rank	Transition from primary to upper primary	Rank	Percentage of Grade 5 students who scored >50 per cent in reading comprehension	Rank	Percentage of Grade 5 students who scored >50 per cent in environmental studies
Himachal Pradesh	1	47	1	57.4	1	80.46	1	98.1	1	42	1	48
Rajasthan	2	23.7	2	21.5	3	67.18	2	92.2	2/3	30	3	39
Madhya Pradesh	3	16.6	3	13.8	2	72.31	3	88.7	2/3	30	2	44

Sample size of schools and school-level actors

A total of 250 school-level actors were surveyed from 22 government schools spread across three districts. These 22 sample schools were distributed across the three districts in such a manner that they were broadly in proportion to the actual number of government schools in these districts. Within each district two administrative blocks (sub-districts) were randomly selected, and sample schools were chosen from these two blocks. This was done to capture district variations. Again, within a district, the sample schools were distributed across rural and urban areas in proportion to the actual number of urban and rural schools in the district. Of the 22 schools surveyed, 14 were from rural areas, while 8 were from urban areas (see *Table* 2).

Table 2. Number of schools surveyed

District	Rural	Urban	Total
Jaipur	6	4	10
Sagar	4	3	7
Solan	4	1	5
All districts	14	8	22

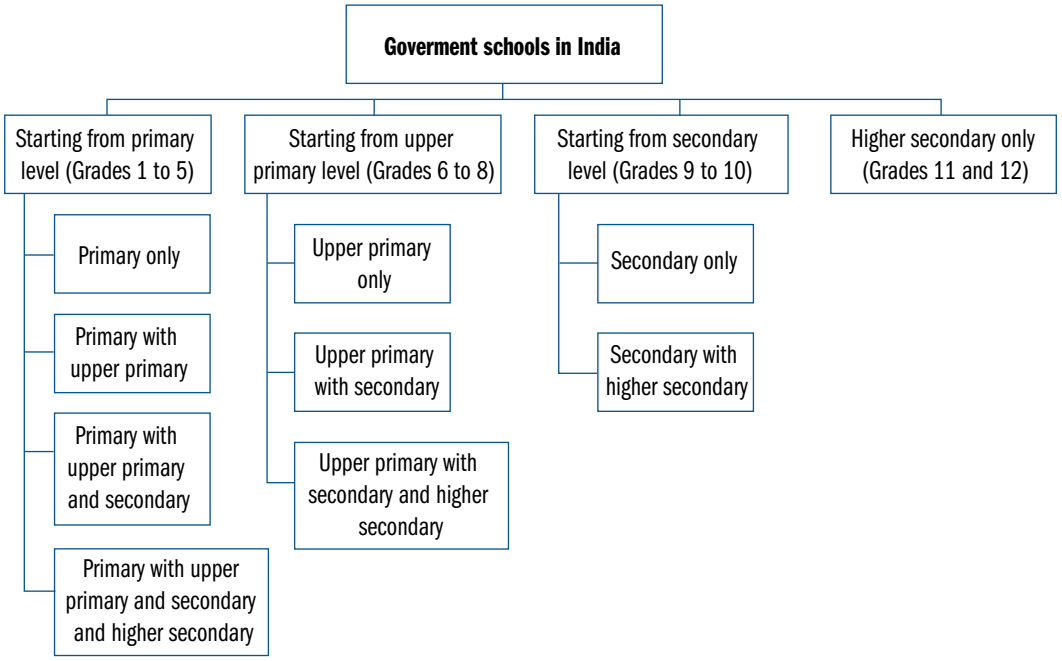
In each selected school, a random sample of seven students was selected from different grades, and one parent for each of these students was interviewed. In addition, interviews were also conducted in each school with (1) the head teacher; (2) the chairperson of the school management committee (SMC), who also happens to be a parent; and (3) one community leader, wherever available. Finally, interviews were conducted with one or two teachers from each school to capture the views of the teaching community. Even though we attempted a few focus group discussions with students, those were not at all successful because of complete lack of awareness among the students regarding either U-DISE or any other open data initiative by government. This has thus been excluded from the study. *Table* 3 provides a distribution of school-level actors who were interviewed.

Table 3. Survey of 250 school-level actors

Actors	Solan	Jaipur	Sagar	Total
Head teachers of schools	5	10	7	22
Parents	35	70	49	154
SMC chairperson	5	10	7	22
Local/community leader or panchayat head	3	8	6	17
Teachers	8	15	12	35
Total school-level actors	56	113	81	250

In India, since U-DISE data are collected across all types of schools, and not only from primary schools (schools having Grades 1 to 5 only), it was ensured that the sample had either all or a subset of these different types of schools. There are different ways schools are constituted in India such as primary schools (Grades 1 to 5), middle schools (Grades 6 to 8), secondary schools (Grades 1 to 10), higher secondary schools (Grades 6 to 12), or a combination of any two or more of these different types (see *Figure 1*). While focusing mainly on primary and middle schools, the reason behind covering a few secondary and higher secondary schools was that in most of the villages the largest school, which is generally a secondary or a higher secondary school, also acts as the nodal school and has the responsibility to oversee any school-level data collection exercise for all schools in that locality. Therefore, it was necessary to cover them in order to understand the entire data collection and verification process for U-DISE.

Figure 1. Types of government schools in India



Source: Prepared by the authors.[6]

6. Unless otherwise indicated, the figures and tables in this book have been prepared by the authors.

Structure of the report

The remaining report is organized as follows. *Chapter 2* reviews the related literature on the linkages between data and accountability in public education systems largely from a developing country's perspective. *Chapter 3* provides a background on all the major data collection initiatives on India's education sector and specifically looks at U-DISE, the ASER survey and the NAS in detail. *Chapter 4* discusses the routes and the models of accountability that can be targeted by using U-DISE data by different stakeholders and the relevant laws in place for publishing data for public access in India. *Chapters 5 and 6* are largely based on the perspectives of the different stakeholders interviewed as part of the study including parents, teachers, community leaders, heads of civil society organizations, and educational administrators. While *Chapter 5* highlights the usefulness and limits of U-DISE data in improving accountability, *Chapter 6* provides conditions for success and strategies for improvement. *Chapter 7* concludes the report with specific policy recommendations.

2. From information to accountability: Literature review

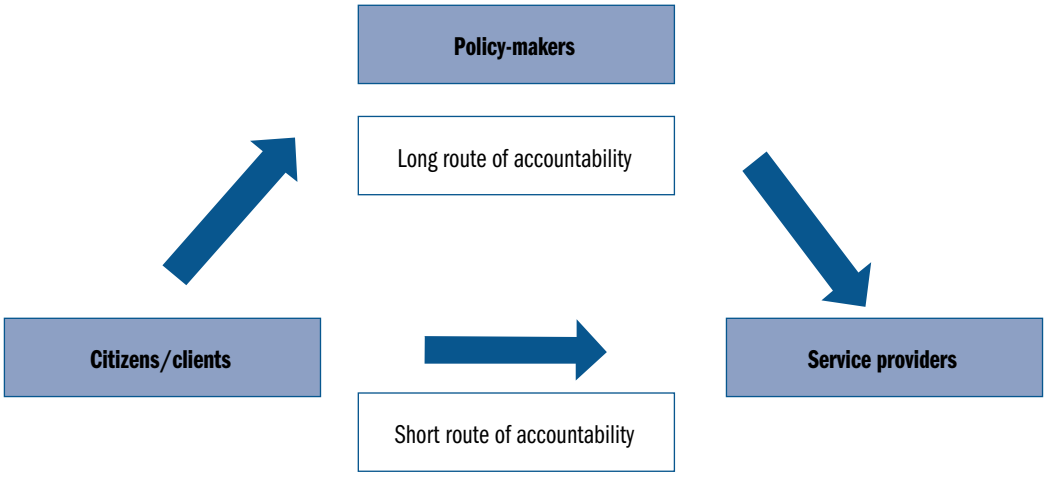
It is widely acknowledged that public service delivery is plagued with chronic problems of inefficiencies and leakages. The public education system in India is no exception. Despite significant investment of resources and progress in access to education, the quality of education remains weak. Systemic failures of accountability often lie at the heart of the problem. In recognition of this, many countries around the world have implemented various mechanisms to hold education providers accountable for students' performance or management of resources by rewarding the achievers and punishing the non-performers. Over the years, there have been numerous studies trying to unpack the relationship between accountability and service delivery and the conditions necessary for an accountable system. This chapter attempts to review and bring together some of these research pieces in order to develop a framework for the main characteristics to an accountable education system. It concludes with a section summarizing evidence on school report cards as a means to strengthen transparency and accountability in education.

2.1 Accountability in public service delivery

The links between accountability and public service delivery were first brought to focus by the *World Development Report 2004: Making Services Work for Poor People* (*WDR 2004*) (World Bank, 2003). The *WDR 2004* identified three key actors in accountability: clients, service providers, and policy-makers. In the context of public education, these players are citizens, teachers, school management bodies, government education departments at local and subnational levels, and of course the central education ministry. Winkler (2004) used the *WDR* framework to fit these actors in the education sector. Clients thus refer to direct beneficiaries such as parents or students and indirect beneficiaries, namely the entire citizenry who benefit from an education and a productive workforce; service providers include both the direct front-line education provider, namely the school, but also the other actors who may not be at the school but support its functioning such as supervisors, curriculum setters, and teacher trainers; and finally policy-makers include both elected officials and education bureaucrats but also those outside the government who may influence policy such as civil society organizations and unions.

The *WDR* framework argued that delivery of basic public services, such as education and health, towards the poor could be improved by putting them at the centre of service provision by enabling them to monitor the service provider. It referred to two routes of accountability: In the 'short route', the clients have a direct relationship with the service providers and can directly hold them accountable in case they fail to provide efficient services (World Bank, 2003). On the contrary, the clients have an indirect relationship with the service providers in the 'long route' of accountability, where the responsibility of service provision lies with the government or policy-makers (see *Figure 2*). Clients let their preferences be known to the policy-makers and they deliver them through the service providers. Delivering services through the government thus involves two steps. First, citizens must be able to draw on political processes, including elections, to articulate their needs and demands and hold the state to account for services they receive. Second, the state, acting as an agent for its citizens, must be able to transmit these demands to the provider of services and make sure that the incentives for these providers are aligned to the preferences and well-being of citizens. Accountability is thus a product of two things working together: a system of institutions designed in a manner that makes accountability possible, and an informed and mobilized citizenry that can draw upon platforms for engagement to make accountability demands on the system.

Figure 2. Short and long routes of accountability



Source: World Bank, 2003.

Public provisioning of education in India can be described as a unique hybrid of both routes of accountability. On the one hand, the government instructs the schools to implement schemes and provides funding for doing so, and in turn the schools deliver education services to the students. At the same time, however, the Indian government has introduced the public-participation model of accountability where the parents and communities can get directly involved in a few domains of accountability and thus get their voices heard. However, despite several accountability measures in place, the fact that accountability failures persist in India, a democracy, suggests that some links in the chain of delegation, from citizens to their representatives and then to the policy executors, are damaged.

Failures in the traditional routes of accountability have led to increased demand for a stronger role that can be played by citizens to directly hold local actors responsible for service provision accountable. At the bedrock of most social accountability mechanisms such as social audits, report cards, community monitoring, and so on is the importance of information. 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)' (Joshi, 2013: 6).

Why is accountability weak in developing countries?

Some of the key reasons for low levels of accountability in public education are weak citizen voice, poor management, insufficient information, confusing roles, and limited incentives (Winkler, 2004). In the context of education, parents are often unaware of the total funds available to schools, the nature of spending of such funds, and the learning outcomes of their children. The problem is more severe in developing countries because parents lack even the most basic information about schools in order to raise their collective voice. This is particularly true of parents who are less educated. Such inaction might even adversely impact the capacity of the policy-makers who might otherwise be willing to implement preferred school policies. This is particularly true for India, where despite several accountability measures in place, service delivery remains weak.

2.2 Role of information interventions for achieving accountability

One common thread that runs across most accountability failures is the lack of information. Information is a key building block for strategies that attempt to tackle weaknesses in

service delivery and accountability at the school level. Data can be used in several ways and by different stakeholders in the education system. In fact, many studies have elaborated on the potential of data-driven decision-making and the use of data in educational policy.

For instance, Mason (2002) and Earl and Katz (2006) argue that effective data use enables school systems to learn more about their school, pinpoint successes and challenges, identify areas of improvement, and help evaluate the effectiveness of programmes and practices and create better plans for improvement. From the citizens' perspective, better quality and relevant information can help parents and community members make better schooling choices for their children and also help them in putting pressure on the school administration and government to improve learning outcomes. A number of authors have also tried to distil the type of information that is useful. According to Matters:

> For a teacher, the central purpose of analysing data is to improve the learning of one or more particular students; that is, the individual teacher and the school take the students who come to them and seek to improve the learning of those students. This purpose is different from that of the sociologist seeking to understand patterns of participation, or that of the policy analyst seeking to understand the impact, if any, of policy setting. A social scientist wants to understand patterns of participation. A policy analyst wants to know the impact of some policy settings (Matters, 2005: 6).

In contrast, according to Winkler (2004), a parent needs three basic kinds of information about schools. These are: (1) minimum standards or benchmark of inputs, (2) academic performance indicators, and (3) financial performance indicators. In the Indian context, minimum standards or benchmarks of inputs would include provisions of the Right to Education Act, such as availability of drinking water and electricity supply, separate toilets for boys and girls, and availability of playground and boundary wall. Academic performance would include indicators of learning as well as transition or dropout rates, and financial performance would include indicators such as expenditure undertaken by the school, and per-student expenditure or budget.

Critical to the importance of information as a bedrock to accountability is how it is disseminated and presented. There could be a number of strategies for information dissemination, varying from what Read and Atinc (2017) term as more 'passive' such as information campaigns, to more 'active interventions' such as social audits or budgeting through public participation. For instance, school evaluation reports and school budgets might simply be publicly posted on a school bulletin board or could be more actively disseminated through school management committees. Similarly, information such as test scores could be published in the media or on the internet but might have more impact if presented at the school level. Moreover, information provided also needs to be selective in terms of the number of indicators as too much information can also be confusing. Read and Atinc (2017) also argue that for data to be useful they also need to take into account what the authors refer to as 'digital and societal divides', or in other words, empowering the already empowered, teaching to the test, or 'burdening the marginalized who can ill afford to divert time away from generating their livelihood'. This is particularly true for the role of technology in both data collection and dissemination. According to the *World Development Report 2016*, 60 per cent of the world's population remained offline, and there are emerging risks of digital technologies outweighing the benefits, such as in cases where they amplify the voice of elites at the expense of the technologically marginalized (World Bank, 2016). Thus, it is essential that data are investigated and interpreted and a narrative or story needs to be constructed using the appropriate methods and techniques whilst keeping in mind the data-related pitfalls and caveats (Tozer and Holmes, 2005).

2.3 From information to accountability

It is increasingly recognized that the links among evidence, transparency, increased public debate, and institutional change are not linear. While transparency is necessary, it is not a sufficient condition for change. Various initiatives have been designed across countries

to engage citizens to ensure efficient public service delivery by government through improved transparency and access to information.

For instance, Lieberman, Posner, and Tsai (2014) again found that providing information to parents about their children's performance on mathematics and literacy tests as well as information about how they might get more involved in improving education outcomes for their children had no discernible impact on levels of active citizenship. Similarly, in a study conducted in 2010, Banerjee *et al.*, tried to distil the impact of information on community involvement in education. Specifically, the study conducted a randomized control trial wherein three interventions were given to encourage beneficiaries to participate in the delivery of education. The interventions were: providing information on existing institutions, training community members in a testing tool for children, and training volunteers to hold remedial reading camps. It was observed that the first two interventions had no impact on community involvement, teacher effort, or learning outcomes inside the school. However, in the third intervention, where youth volunteered to teach in camps, reading skills of children who attended these camps substantially improved.

Part of the problem with most of the interventions that use data, as Read and Atinc (2017) argue, is that without in-depth research-based evidence it is difficult to understand whether information interventions for demanding accountability failed because of misalignment of the type of information with the audience or because there are many other challenges to effective accountability relationships apart from lack of information. Read and Atinc (2017) reviewed 30 interventions on education and mapped them based on the type of intervention, the change agent, and the outcome. Accordingly, they were able to distinguish among the interventions based on whether the intervention focused on collection – the most passive form – to more active forms when the intervention was based on dissemination of information or most active when they are made actionable. Thus they argued that for a 'more positive, system-wide impact on education and learning it is important to link information to specific paths of action' (Read and Atinc, 2017: 4).

2.4 Challenges in achieving accountability in public education

It is clear that there are a number of factors that need to work together in order to create an accountable public education system. There is often limited incentive to collect and disseminate data, and in the absence of relevant, reliable, and user-friendly information, institutional accountability becomes weak and in turn citizens are unable to exercise their voice or monitor service delivery. Consequently, accountability is seriously compromised. Other factors in ensuring this chain from transparency to accountability are relevant mandates and legal systems in place, enforcement of mandates through reward/sanction processes, creating strong incentives for each actor in the service delivery chain to perform, and presence of a formal bottom-up grievance redressal mechanism specific to school education. The absence of any of these key components with respect to the country in question is likely to result in an accountability loop that is unclosed.

Winkler (2004) categorized these challenges as those external and internal to the education sector. The external challenges are the ones that cannot be changed by the education sector alone. Some of the key external challenges are considered to be weak management practices pervading the public sector, making it difficult for the management of the education sector to improve; poor public budgeting and spending practices resulting in unpredictable education funding; and shared responsibilities resulting from political compromise. On the other hand, some of the major challenges that are internal to the education sector are unwillingness of the public sector schools to welcome parental involvement, non-availability of reliable information on academic performance at the school level, and lack of evaluation culture for teachers or schools in public education (see *Figure 3*).

Figure 3. Challenges in ensuring accountability in public education

Internal challenges

- Unwillingness of public schools to welcome parental involvement
- Scarcity of reliable information on academic performances
- Lack of evaluation structure of schools: Evaluation of teachers or schools is rarely conducted

External challenges

- Passive behaviour of citizens and parents due to lack of experience with popular democracy
- Weak management practices in overall public sector
- Poor public budgeting and spending practices creating unpredictable education funding
- Shared responsibilities resulting from political compromise requiring renegotiation to be changed

Source: Winkler, 2004.

It is clear from the above discussion that creating accountability in public education is complex. A number of different actors are responsible for ensuring accountability, and arriving at a strong, accountable system requires that every actor in the service delivery chain has a strong incentive as well as capacity to perform. Both of these are discussed below.

Lack of incentives

In a private market, when the citizens do not receive the services they are entitled to, they can either take legal action against the service provider or refrain from using services from that particular provider, leading to a declining market share. With respect to public service delivery, however, for incentives to have an impact they need to be designed carefully. Moreover, they need to exist for both the generator of data as well as the user.

For instance, Levitt and Dubner (2005) conducted a study of Chicago Public Schools teachers and found that teachers were cheating on standardized tests and were inflating scores of students. They estimated that at least 5 per cent of teachers were tampering with test scores. School staff members faced penalties if their students scored below a certain cut-off, and teachers were therefore incentivized to cheat. In such a scenario, despite the presence of data, the upward representation of student scores would mean that students might not receive the requisite attention from a teacher and might not actually improve, leading again to a failure of accountability.

At the same time, parents also often lack incentives to use information or data for demanding accountability. Among economically poorer sections of the society or among those with lower literacy levels, in case parents do not believe in the value of education, public access to education might not lead to the desired action. It is observed that in certain cases parents accord improvements in quality of education a lower priority compared with other social issues that impact them. Rowland and Smith (2014) noted that voicing concerns can be a 'costly' exercise for parents, as the time that they need to devote to it could otherwise be used in income-generating activities. A parent might not also be interested in overall improvement of learning level of students in a school or a district, but might be interested in only one individual child's skill development and growth. For instance, a study conducted by Banerjee *et al.* (2010) found that when information interventions were introduced in India,

parents were more interested in immediate benefits for their own children rather than broader issues of quality improvement in learning.

Lack of capacity

As with incentives, capacity is another key component that has an impact on different stakeholders. From the perspective of the service provider, capacity entails the ability to do one's job according to one's role and responsibility. However, there is also the question of capacity of citizens to engage and use data or evidence to demand accountability. Lieberman, Posner, and Tsai (2014) argue that for citizens to get their voices heard, they need to understand 'whom to contact, what to say, and more generally, how the political and educational systems work and where they can most effectively apply pressure for improvements' (Lieberman, Posner and Tsai, 2014: 80). Lack of such capacity might otherwise lead to either inaction or undertaking action that might not have an impact. Thus as Read and Atinc (2017) note, interventions reforming accountability or transparency should be planned and implemented in a manner that is aligned with points of decision-making and responsibility.

2.5 School report cards for strengthening accountability and transparency

Each of the factors and challenges mentioned above are relevant for school report cards as a means to strengthen accountability and transparency. School report cards broadly refer to information on school progress in terms of indicators of educational outcomes such as student learning, transition rates, dropout rates, school facilities, and enrolments. Such information could be generated either for a particular school or for a district or a state, or for the country as a whole. The various report cards document how education systems are performing. One of the key roles that these report cards are meant to play is to help education ministries set policy priorities, and generate recommendations and actions for change. School report cards have great potential to be used as information tools to encourage greater community participation to improve education quality. However, generating school report cards at different levels is not sufficient to meet the intended objectives.

First, for report cards to be most effective, the organization producing them should have a clear idea of the intended audience and what its goals are, especially because they can be used for a variety of purposes, not all of which overlap. Ana Florez argues that 'if the intent is to strengthen existing systems for collecting data, a top-down approach report card will serve the needs of ministries of education. If the intent of the school report card is to strengthen community decision-making and local accountability, a bottom-up approach is likely to be more effective' (Florez, 2006: 5–6).

Second, for school report cards to be effective accountability tools, the information must be presented in a format that is understandable to its audience. Accordingly, it is very important that the producers of such information have the capacity to do so. Even the most detailed and complex information presented in a simple manner in terms of graphs, maps, and pictures can generate in-depth discussions. For instance, in most developing countries, for parents who rarely take time to visit schools or are illiterate, school report card efforts should focus on empowering them to understand why their children need to improve their levels of learning, whether their children are meeting standards, and what they, as parents, can do to help. Such support should be provided using simple indicators, by comparing them with benchmarks or averages wherever applicable, that focus on education quality.

Finally, in order for school report cards to be a tool to ensure movement from transparency to accountability, it is essential that a clear action pathway be outlined. This would entail setting up checks and balances to ensure the veracity of the information, clearly articulated roles and responsibilities of the stakeholders, and well-defined grievance redressal mechanisms and/or legal mandates in case of failure of compliance.

3. Review of data sources on school education in India

For the successful implementation of any educational programme, it is essential to have a robust monitoring mechanism with an efficient and rigorous information collection system. A sound statistical base assumes further importance given the crucial role of education in socio-economic development (Tilak, 2014). With over 1.4 million elementary schools and 1.5 million secondary schools in India, the education ecosystem consists of a range of different actors – including government, private entities, parents and community, and civil society organizations (CSOs). All these actors work with some form of data. Yet unfortunately there is limited evidence on the different practices, types, and usage of education data available in the country. School education data can broadly be classified into three categories:

- **Government led:** The data that are collected by those within the government who are directly involved in education decision-making or in providing technical support. This includes data collected by the Ministry of Human Resource Development (MHRD), the National University for Educational Planning and Administration (NIEPA), and the National Council for Educational Research and Training (NCERT), a premier organization dealing with capacity building and research in planning and management of education set up by MHRD.
- **Government autonomous institutions:** Organizations that are under the government but may not be directly involved in any education functions. These include the Office of the Registrar General of India and the National Sample Survey Office.
- **Civil society led:** A large number of CSOs are responsible for filing some of the data gaps such as the Annual Status of Education Report (ASER) on learning outcomes.

This chapter offers a descriptive account of the two government-led initiatives for large-scale data collection on education in India and one civil society led initiative on basic learning outcomes of children in the school-going age group. These are: (1) the Unified District Information System for Education (U-DISE) designed by NIEPA; (2) the National Achievement Survey (NAS) by NCERT; and (3) the ASER survey, conducted by ASER Centre. While U-DISE provides information about each and every school in India, ASER and NAS are two different mechanisms for measuring learning levels of children.

3.1 U-DISE

U-DISE[7] is the single largest effort to create an educational management information system on key school-level indicators for India. Prior to U-DISE, accessing school-level data on educational indicators was a big challenge in the country. Notwithstanding these limitations, school-level statistics form the basis of planning, monitoring, and evaluation for any kind of intervention planned in education. Covering data for all types of schools (public and private), spread over 680 districts across the 36 states and union territories of the country, U-DISE is visualized as a 'sound information base for the planning and monitoring of project intervention' (NIEPA, 2017).

The first version of the software, named District Information System for Education (DISE), was released by NIEPA in 1995. The software was later redesigned in 2001 in the light of the launch of Sarva Shiksha Abhiyan (SSA). During this time, not only was the coverage of DISE extended to other states, but it was also extended from primary to the elementary

7. Website: udise.in

level (Grades 1 to 8). In 2005/2006, all districts in the country were covered under DISE for the first time. However, at the time, data collection was limited to the elementary level. In 2007/2008, DISE developed the online software. After 2009, NIEPA extended the coverage of DISE from the elementary to secondary and higher secondary levels (Grades 1 to 12). In 2012/2013, a single format for data collection was developed for all schools at all levels, and DISE was replaced by U-DISE. Since 2012/2013, the U-DISE data cover the entire school system.

Table 4. Number of schools covered by U-DISE in 2015/2016 across type

Type of school	Number of schools
Primary only	840,546
Primary with upper primary	282,080
Primary with upper primary and secondary and higher secondary	41,173
Upper primary only	147,544
Upper primary with secondary and higher secondary	35,782
Primary with upper primary and secondary	49,400
Upper primary with secondary	52,553
Secondary only	37,586
Secondary with higher secondary	22,654
Higher secondary only	13,028
All schools 2015/2016	1,522,346

Source: NIEPA, 2016

U-DISE Data Capture Format

U-DISE Data Capture Format (DCF)[8] is distributed to schools to capture school-level data on a wide variety of aspects of schools including school profile (management, sources of funding, school type, language of instruction, etc.); enrolment and repeater information (by age, sex, social class, etc.); teacher provision (including availability and qualification of teachers, teacher training); infrastructure and learning facilities; examination results; and receipts of school grants (NUEPA, Last accessed on 17 August 2017). With the launch of the Right to Education Act (RTE), a set of new indicators was added to gauge the extent of school compliance with RTE objectives and targets. These included information on the constitution and functionality of school management committees (SMCs); the number of instructional days in the school; details about operating hours of schools; provision of 25 per cent reservation of seats in private unaided schools for children from economically weaker sections of the society; number of remedial classes provided to students; and details on the availability of textbooks, uniforms, and other provisions guaranteed under RTE, among others. Each school in India is provided with a unique 11-digit U-DISE code with the first four digits representing the district and the last seven digits uniquely defining the school in the district.

Apart from the general set of parameters provided by NIEPA, states and union territories have full authority to add provisions to capture any additional data/information relevant to their needs. Additionally, while unrecognized schools are not considered by NIEPA, a state or union territory can choose to include them in their U-DISE format, especially if they have a large proportion of unrecognized schools operating within their territories.

8. The U-DISE DCF is available in the link: http://udise.in/Downloads/UDISE_DCF2016-17_12Aug2016.pdf

U-DISE implementation and stakeholder mapping

U-DISE is an annual process of information collection and dissemination and involves the following activities:

- data collection from schools in hard copy format,
- data entry into U-DISE software,
- data verification and collation,
- data dissemination,
- data use by different stakeholders.

Before discussing the details of data collection and verification process in U-DISE, we mapped the stakeholders involved at each step and looked at their roles.

As part of the SSA infrastructure and manpower set-up in India, every state has a state SSA office, all districts have district SSA project offices, all the blocks within a district have Block Resource Centres (BRCs) and within each block there are CRCs. At each level, there are management information system (MIS) officials and data entry operators who play a crucial role in execution of the U-DISE data collection process. NIEPA's role is mainly restricted to the finalization of data capture formats for collection of school data; designing the U-DISE software for data entry and aggregation; collation of data at the centre from all states; final data validation; and making the final data available online in the U-DISE portal in the form of different reports, school report cards, and raw files.

U-DISE school report cards

Once the data collected through U-DISE DCF are entered into the software and verified, a one-page document listing a few key indicators about the school is generated, known as the school report card. These report cards are generated for every school for every year, and can be downloaded from the DISE portal.

A school report card provides information about several key indicators. Among others, these include general information about the school (category – public or private; primary, middle, or secondary, etc.); information about the staff (number of teachers hired, number of qualified teachers, etc.); information about infrastructure and facilities (utilities, number of classrooms, etc.); information on enrolment (by social strata or social groups, such as Scheduled Caste [SC], Scheduled Tribe [ST], Other Backward Classes [OBC] and General); a broad overview of examination results (percentage who passed, by grade and social stratum); information about RTE provisions; SMC-related information; and information on a school feeding programme known as the Mid-Day Meal (MDM) Scheme. A snapshot of the different parameters presented by school report cards is provided in *Table 5*.

The information presented in the form of school report cards for every school is made available to the public on their website[9] after undergoing consistency checks and requisite validation of the information conducted by the states. Citizens can locate a school through the U-DISE unique code or geographically by drilling down from the state to the village level. A snapshot of a U-DISE school report card is presented in *Figure 4*.

The selection of indicators included in U-DISE DCF is arrived at through a collaborative discussion process between NIEPA and MHRD with feedback from funders such as the World Bank and UNICEF. *Figure 5* summarizes the different types of stakeholders involved and their roles across five broad activities in the U-DISE process: data collection, data entry, data verification and collation, dissemination, and use of data.

9. The website to access U-DISE school report cards: http://schoolreportcards.in/SRC-New/

Table 5. Content of U-DISE school report cards

S. No.	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 (CRC) officers, academic inspections • Financial grants: 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 (CWSN), computer use, number of teachers who received in-service training • Non-teaching assignments: Number of teachers involved, average working days spent
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
6.	Incentives	• Number of textbooks and uniforms given to students during previous academic year (categorized by primary or secondary, gender, caste, and religion (Muslim)
7.	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
8.	Proportions, percentages	• Enrolment: Percentage girls enrolment, percentage Muslim girls to Muslim enrolment, percentage Muslim enrolment, percentage SC girls to SC enrolment, percentage SC enrolment, percentage ST girls to ST enrolment, percentage ST enrolment, percentage 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
9.	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

S. No.	Data/ information head	Content
10.	Children from 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
11.	SMC (Only for government/ aided schools)	• Data on when the SMC was constituted • Data on members: Number of representatives of local authority, parents/ guardians/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
12.	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
13.	Teacher learning material	• Data on complete textbooks received, TLM, play material, games and sports equipment available for each grade (categorized by primary, upper primary, etc.)
14.	MDM (Only for government/ aided schools)	• Data on the source of , status of MDM, and status of kitchen-shed

Figure 4. Snapshot of a U-DISE school report card

		SCHOOL REPORT CARD:	2015-16 *
State	MADHYA PRADESH	District Name	SAGAR
Village Name	ANATPURA	Cluster Name	2311080030 - GHSS JAITPUR KOPRA
Block Name	DEORI	School Code & Name	23110616106 , GOVT HS ANANTPURA
PINCODE	470227	Name of Head Maste	P.S.K. BHORGHARI

Management	Department of Education	School Category		Secondary only	Type of School		Co-Educational			
Location	Rural	Lowest Class	9	Highest Class	10	Instructional Days & Working Hours	Pri.	U.Pri.	Sec.	H.sec.
Year of Establishment	2004	Approachable by all weather road	Yes	Shift School	No	Instructional Days	0	0	215	0
Special Sch for CWSN	No	Visits by Resource Tch. for CWSN	0	Residential School	No	Sch. Hours for Children	na	na	6.00	na
Academic Inspections	0	Visits by CRC Coordinator	0	Visits by Block Level Officer	0	Tch. Working Hours	na	na	7.00	na
Pre-Primary Section	NA	Total Students (Pre-Primary)	0	Total Teachers (Pre-Primary	0	Affiliation Board for Sec.			State Board	
Streams available						Affiliation Board for H.Sec.			NA	

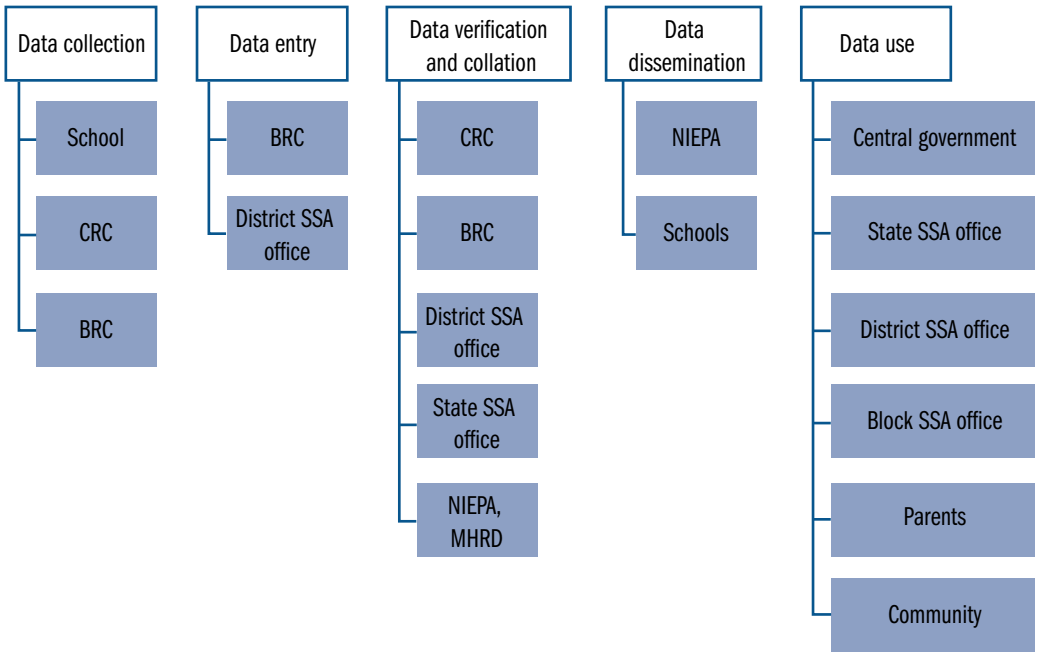
	Year of Recog.	Year of Upgrade	Medium of Instruction Medium 1	Medium 2	Medium 3	Funds:SSA(₹)	Recd.	Expd.	Grants:RMSA(₹)	Recd.	Expd.	Spillover
Elementary	0		Hindi	NA	NA	TLM Grant	0	0	Civil Works	0	0	0
Secondary	2004	2004				School Devp. Grant	0	0	Annual Grant(Rec.	35000	0	0
Hr.Secondary						School Maintanence Gran	0	0	Others	0	0	0

School Building, Equipment & Facilities

Drinking water facility	Hand pumps	Drinking water functional	Yes	Boundary wall	No boundary wall	Integrated Sci. Lab. (Sec.)				No
Medical check-up of Students	Yes	Ramp for disabled needed	NA	Ramp available	na	Hand rails for ramp				na
# of classrooms for Teaching	0	Number of other Rooms	0	Library	Yes	# of books in school Librar				15
Status of School Building	No Building	Separate room for HM	No	# of Classrooms	Elem.	Sec.	Hr.Sec.	Toilet Seats	Boys	Girls
Playground	Yes	Land available for playgroun	na	Good Condition	0	0	0	Total	1	1
# of computers available	0	# of computers functional	0	Req. Major Repair	0	0	0	Functional	1	1
Electricity	Yes	Computer Aided Learning lab	No	Req. Minor Repair	0	0	0	Hand Wash	No	No
Measured Campus Plan	No	Internet	No	Land for additional Classroom			Yes	CWSN friendly Toile		No

Source: U-DISE.

Figure 5. Stakeholders involved in U-DISE



U-DISE data collection process

The process of recording and collecting DISE data is administered primarily by the following stakeholders:

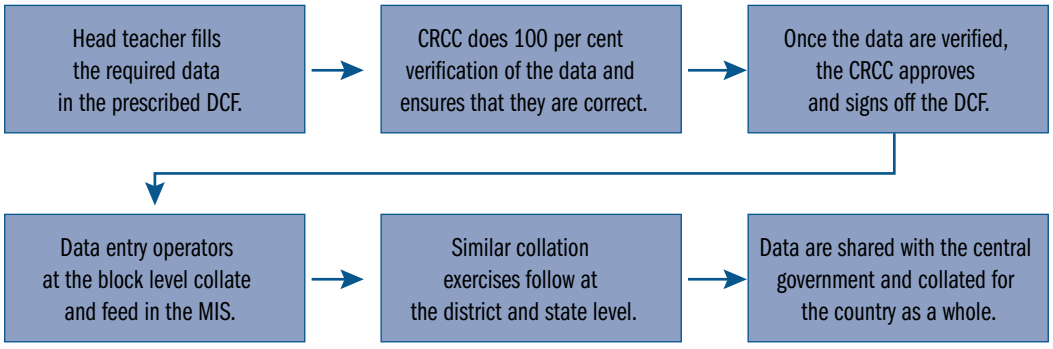
Head teacher of a school: The responsibility for filling the DCF at the school level lies with the head teacher. Head teachers often use the assistance of a few other experienced teachers to fill up the U-DISE format.

Cluster Resource Centre Coordinator (CRCC): A CRC, headed by a CRCC, is based at the largest school among 10 to 15 schools, depending on the state. The CRCCs are responsible for monthly monitoring (via visits) of all schools within their cluster and providing them with regular pedagogical support. They are the primary stakeholders responsible for collating U-DISE data and ensuring that the format is filled in a timely manner as per prescribed guidelines. Upon completion, the CRCC delivers the DCF to the block education office.

Once the DCF reaches the block-level SSA office (BRC), the data entry operators feed the data into the MIS wherein the district-level stakeholders collate all the data for its respective blocks. Finally, it is shared with the state and then the centre.

Figure 6 summarizes the U-DISE data collection process.

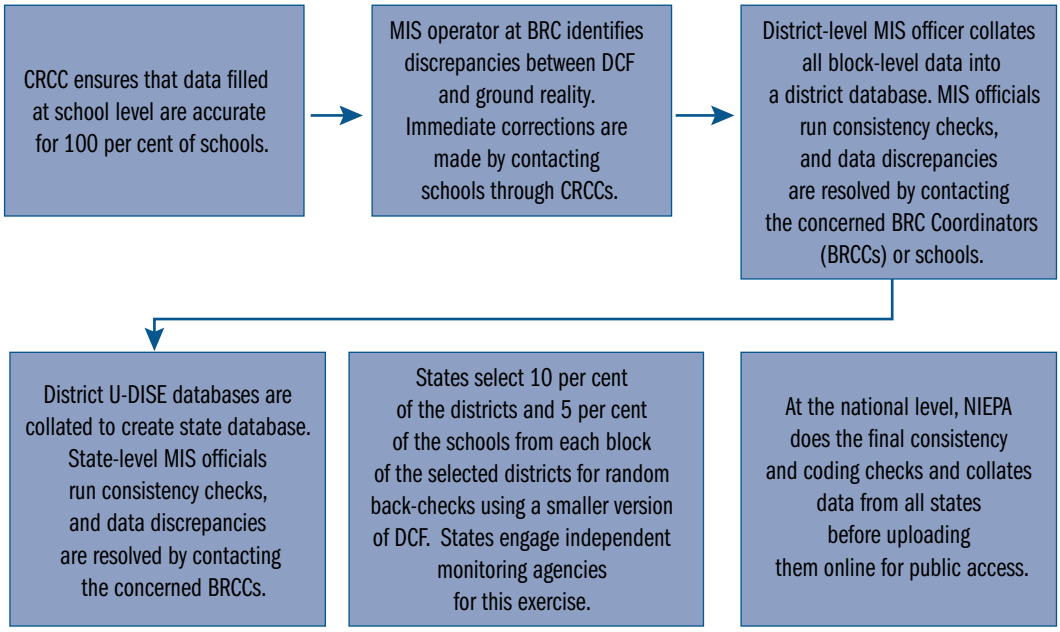
Figure 6. Data collection process in U-DISE



Mechanisms for ensuring data quality in U-DISE

An important facet of U-DISE is the mechanism developed for validating and verifying the collected information. A brief description of the U-DISE data verification process is presented in *Figure 7*.

Figure 7. Mechanism for U-DISE data verification



U-DISE has a considerably strong data-checking and verification process in place. The verification of U-DISE data happens at various levels: CRCs, BRCs, district SSA offices, state SSA offices, and the centre (NIEPA). It involves verification of all collected data and additional checks and verification for a small proportion of sampled schools in every state.

The first level of verification of the U-DISE formats is undertaken by CRCCs, who are responsible for ensuring the authenticity of school data through auditing and validation of the data collected. Consistency checks are done through comparisons with other related indicators or through field-level observations. In the case of any discrepancy, CRCCs send the DCF back so that the school staff can refill it. Each DCF is to be signed off by three personnel: the school staff member responsible for filling the DCF, the head teacher, and the CRCC. CRCCs need to cross-check U-DISE DCFs for all schools under their jurisdiction.

The SSA block coordinators, known as the BRCCs, are responsible for regularly monitoring schools within their block and are thus in the best position to identify any discrepancy between data entered in the DCFs and the ground reality. All such data discrepancies are immediately rectified by contacting schools. Ideally, BRCCs need to cross-check U-DISE DCFs for 25 per cent of the schools in their respective block.

At the district level, the officers in charge of collating all block-level data into one district database are responsible for running their own consistency checks to check data quality. This also entails random cross-checks of a certain number of schools (ideally five schools from each block) from all blocks. Again, any data discrepancy is corrected at the district level by contacting schools via the relevant BRCC.

The final database from each district is sent to the state SSA office. The MIS head at the state office, with one or two data operators, collate and put together databases from all districts into one single database for the state. Consistency checks are again undertaken to identify errors if any. If any error is found, the state SSA office immediately has to contact the relevant district project officer or the BRCC to make corrections. The state office also

does some random rechecking of U-DISE data through the BRCs. Ideally, each state has to pick a sample of 10 per cent of its districts with a minimum selection of two districts. From each selected district, 5 per cent of the schools are selected from all blocks and separate data verification (through a separate form) is undertaken. States are instructed to identify and engage independent monitoring agencies for the sample checking of the data collection process. Such agencies are responsible for submitting a detailed report commenting on the coverage of schooling in the district.

Once U-DISE data are finalized at state SSA office, they are then submitted to NIEPA office at the centre. The U-DISE team at NIEPA also does a final consistency check of the data before creating a central database for the country.

Comparisons allowed in U-DISE

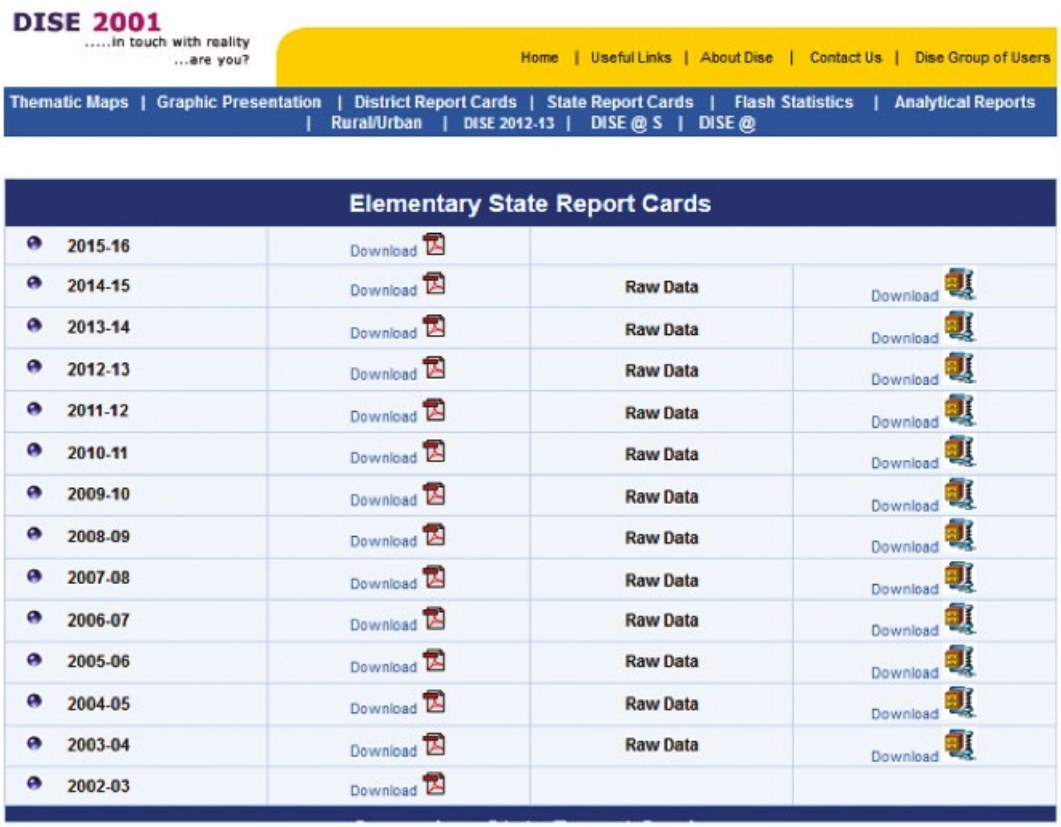
The data at the school, district, and state levels allow for several comparisons. The data are available for every year. Therefore, one can compare across schools, districts, and states across a range of school-level indicators in a given year. By combining data for several years, time series analysis of a school, district, or state is also possible. One can also trace comparisons between schools, districts, or states over time. It is possible to set a benchmark and compare schools to that.

Means to access U-DISE data and its dissemination

U-DISE is the primary source of information on the current requirements of infrastructure – both human and physical – in different schools and provides a comparative picture of how schools, districts, and states are doing on select education indicators. Given that data are collected annually, U-DISE has extremely large sets of data about each school in every district of India that can be downloaded in raw, machine-readable format. Recently, U-DISE launched a report module generator that enables the selection of specific indicators to generate tailored reports. All U-DISE related data/information, activities, revisions, and events are available on a NIEPA-designed portal: U-DISE (http://udise.in/index.htm). The only way to access data is via online portals. The U-DISE website publishes district- and state-level data. Alongside its report cards, it also provides raw data sets for each year. The site last published a district/state-level report card for the academic year 2015/2016. The download page for U-DISE data can be seen below. Another portal, which can be accessed independently and via the U-DISE website, is the portal for school report cards (http://schoolreportcards.in/SRC-New/). This portal was also designed by NIEPA. The school report card website provides school-specific U-DISE data while also acting as a directory for all types of schools (government, private, private-aided, local body, madrasa, etc.) throughout the country. It is possible to use information about schools, such as the name of the school, to download the school report card. The download page for school report cards is in *Figure 8*.

Further, to improve the quality of U-DISE data and strengthen their reach, NIEPA instructs the states in the state-level training to publicly display the U-DISE school report cards in each school on noticeboards. In addition, instructions are sent to each state that the U-DISE school report cards should be read out to the local community during SMC meetings and other village-level public meetings (also known as gram sabhas) in order to ensure transparency and accountability. In 2010, school report cards under U-DISE won a number of awards for bringing higher accountability and capturing education data. In order to ensure greater reach and access, U-DISE support is available online for assistance to all. The support includes the recent U-DISE setup software, database organization, the school database, export and import utility, U-DISE reporter, and DCFs including instruction manuals. In addition, a national toll-free number is available to users of U-DISE, researchers across the globe, and MIS officials looking after U-DISE and MIS activities in the state, district, block, and cluster level.

Figure 8. Screenshot of the U-DISE page for downloading data



Some limitations in U-DISE implementation process

Currently, there is a big gap of around a year between schools submitting the filled-in U-DISE DCFs and the school report cards being actually available online for public access. This is because some states, generally the larger ones, take much more time in the data collection and verification process compared with others. NIEPA is in a position to upload the data on to its website only when all the states submit their data and the final verification process is complete.

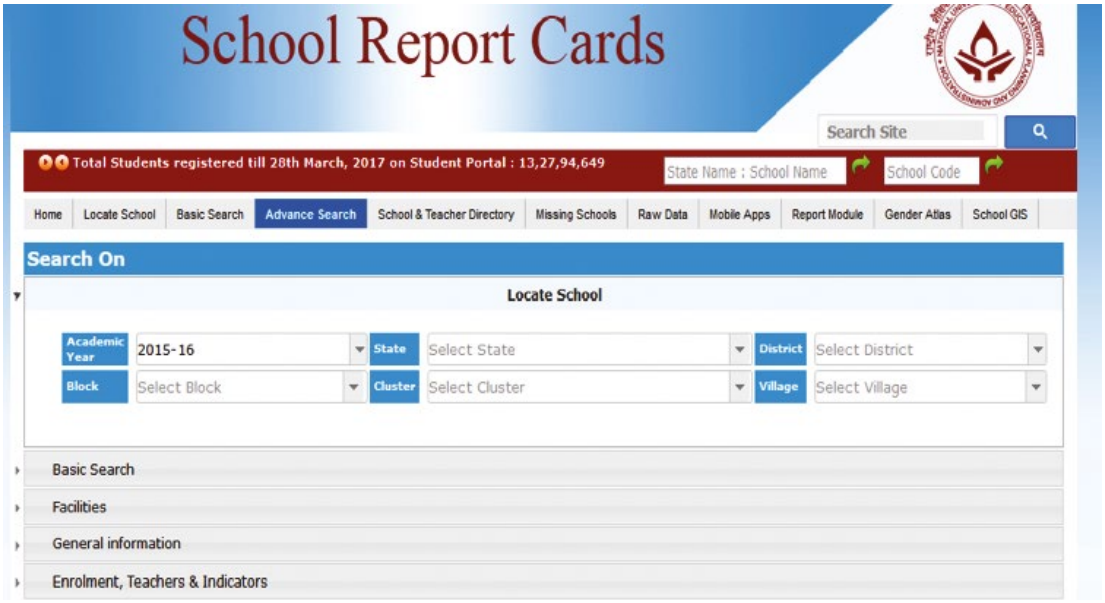
NIEPA improvises the U-DISE software from time to time and keeps adding new features to it. This implies that the data entry operators at the block and district levels have to be trained again, and this process sometimes leads to delays in work and creates confusion.

Because of the huge magnitude and volume of data to be entered, at times the U-DISE software at the district and block levels hangs, and there is a possibility of information loss. This is an issue with the data entry software, which needs to be improved to handle a larger amount of data.

In many states, the data entry operators, who enter the U-DISE data at the block and district level SSA offices, are contractual employees. As a result, most of them tend to change frequently and therefore they are not as involved in understanding the overall objective of U-DISE and they need to be trained all over again. In some cases, this affects the data entry and error-checking process.

According to the Indian Constitution, education is on the 'concurrent list', which means that both the centre and the states can legislate on any aspect of education. The centre can implement directly any policy decision in the states. Thus once NIEPA trains and instructs the states on U-DISE implementation, it is the states' responsibility to conduct the necessary training and implement it. The way the training is conducted is far from ideal.

Figure 9. Screenshot of the download page for school report cards



NIEPA conducts extensive training for state-level officials in charge of U-DISE. However, the training provided by the state to the officials in charge of U-DISE at the district, block, and cluster levels is less detailed compared with training at the state level. This affects the quality of the data entered. Because of a lack of rigour in district- and block-level training, some of the instructions do not reach the block or the CRCCs. For instance, although every school is supposed to display the U-DISE school report card on the noticeboard as per NIEPA instructions, most of the time this does not happen because either the block coordinators are not aware of it or they do not have a strict mandate to implement this.

Despite verification and rechecking processes in place, there are data quality issues that still persist in U-DISE. Owing to strict deadlines in the U-DISE data collection process, the CRCCs and BRCCs are not always able to complete verification and consistency checks for all indicators for all schools. This sometimes affects the quality or accuracy of the data submitted to the district or the state.

Student Database Management Information System (SDMIS): New initiative under U-DISE

In a bid to keep an annual record of academic performances and basic individual details of all the students across their school education years in the country, NIEPA has developed a SDMIS. Introduced for the first time for the academic year 2016/2017, SDMIS aims to cover approximately 250 million students and is the largest student database in the world. At present, SDMIS is primarily targeted as a resource for the government at various levels (local as well as central), to monitor and assess the needs of students on a range of indicators including student entitlements (described in detail later). However, the aim of SDMIS is to gradually create a platform for parent–teacher interaction and is expected to aid in monitoring teacher performance. Ultimately, it will be possible to track every student through SDMIS by his or her unique Aadhaar[10] number so that it can also be applied as a child tracking system. However, until each student has an Aadhaar number, they will be provided unique identification numbers through U-DISE. The SDMIS will generate a unique student ID for each student enrolled and covered under U-DISE/SDMIS. The government is hopeful that in a year or two, all the students in India will have Aadhaar numbers.

Since collecting data for every child from all schools and feeding this information into the U-DISE software is a mammoth task for a country as large as India, NIEPA is of the view that it will take at least two years to have information about all existing students in the country.

10. Aadhaar is a unique 12-digit identification number issued by the Indian government to every individual resident of India.

Once this is done, the data collection exercise will be relatively simpler – only information on new admissions, dropouts, transfers, and repeaters would have to be updated, and the others would be automatically transferred to the next grade by the software itself. The SDMIS website is operational, but the data are not yet publicly available online. Until it goes completely online, NIEPA aims to collect both SDMIS information and the U-DISE format. Once the SDMIS is ready, student-based indicators will be removed from U-DISE and transferred to SDMIS, and U-DISE will be used only to capture school-level data/information on infrastructure and the school management. Such a structure would also ensure that U-DISE and SDMIS serve different objectives but are collectively used in policy-making measures. The ultimate objective of the SDMIS is to develop a system in which real-time data/information are fed directly by schoolteachers online. It would thus remove the process of cumbersome data/information collection exercises. However, there is no set timeline for the achievement of this objective.

Details of data collected in SDMIS

SDMIS aims to collect information on the following categories: student entitlements (MDM Scheme-related information, textbooks, uniform, transport, scholarship, etc.), student achievements (attendance, examination-related information, etc.), student profile (caste, gender, religion, disability, mother tongue, health, below-poverty-line status), and financial status of the child, among other variables. All indicators can be generated at the national, state, district, block, cluster, and school levels. Moreover, SDMIS can also automatically calculate enrolment ratios (gross enrolment ratio and NER), and flow rates (dropout, repetition, promotion, retention, transition, survival rates, etc.). The standard student DCF and the indicators included in this can be referred to in *Annex C*. In SDMIS, data can be collected in four ways, taking into account the local context:

- **Online:** needs dedicated internet connectivity and computer.
- **Offline:** no internet required, but software needs to be installed in the local machine. A separate module for entering data on students has been provided in the existing U-DISE software., which facilitates offline data entry.
- **Hybrid:** data entry can be entered offline and can be synchronized whenever internet is available.
- **Bulk upload:** data collected through Excel sheets can be uploaded on to the database using the online option.

Wherever possible, data entry may take place at the cluster level. In case it is needed, there are plans to create a mobile application for validating and updating data, and data entry can be done by different states in their local regional language. While these features are not yet ready, they will certainly streamline the process of data collection once active. In an attempt to be more dynamic and flexible, a facility will be available to states to add a number of additional supplementary variables that can be maintained in the same database along with the national-level variables. Data entry and cross-sectional reports on these additional supplementary variables will also be available in the same module. This will allow states to expand the data collection based on the local context and situation in the state. The software used for SDMIS has been built in-house and ownership is retained.

In order to ensure a smooth launch and completion of data collection, states have been requested to conduct workshops at all levels. The data need to be uploaded by 30 September every year, which is to be known as U-DISE day. The data are to be collected from every school irrespective of school category (primary, upper primary, secondary, and higher secondary), school management (government, local bodies, aided, private, and unrecognized), school type (boys, girls, and co-educational), and school location (rural and urban). Madrasas, both recognized and unrecognized, will also be covered. Additionally, the website for SDMIS[11] is already operational.

11. Website to access U-DISE SDMIS: http://student.udise.in/

Data verification

The present mode of data checking for SDMIS is similar to that prescribed for U-DISE by NIEPA: 100 per cent data check at cluster level, 25 per cent at block level, and 10 per cent at district level. Until the time all schools have the capacity and infrastructure to do their own data entry, cluster- and block-level offices will be responsible for data entry. The CRC needs to scrutinize and cross-check all data (100 per cent) in the cluster, while the BRC needs to do the same for 25 per cent of the data, prior to data entry. At the district level, the data are scrutinized and cross-checked for five schools from each block (all from different clusters). The data for all blocks are merged and consistency checks are undertaken at the district level. Errors and discrepancies are also checked at the state level, following which the data need to be submitted to NIEPA.

3.2 ASER survey

Started in 2005, the ASER is conducted annually by the ASER Centre, an independent unit within the larger network of the non-governmental organization Pratham,[12] which works on education in India. It is one of the biggest civil society led surveys and measures basic minimum learning levels of children in rural India on an annual basis.

This section is based on detailed interviews that we have conducted with the following people: (1) director of ASER, India; (2) research head (ASER, India); and (3) state-level ASER managers in three states where we conducted the school surveys. We also collected views on ASER from teachers and parents from the school-level surveys.

Rationale

The rationale for starting ASER was the complete lack of information on learning outcomes of students. With the education administration focusing on universal coverage through increased enrolment and access to schools, there was limited debate or attention given to the processes within the classroom and learning outcomes.

ASER's vision thus stemmed from the belief that merely getting children into schools is only one part of the story. What was more important to understand was whether they were learning what they were supposed to learn. The primary objective of the ASER survey was thus to generate estimates of children's schooling status and basic learning levels at district, state, and national levels, and to measure changes in these parameters over time.

The ASER survey is conducted annually and covers all rural districts of India, and thus it is the only annual source of information on children's learning outcomes available in India today. With a break in 2015, the ASER survey was again conducted in 2016, thereby allowing for measurement of progress over a period of time. The sampling design of ASER allows for state-level estimates for all indicators. In India, learning assessment surveys conducted by government, such as the NAS, assess learning levels of students in a certain grade as to what they are expected to learn in that specific age and grade. This method assumes that children in a certain grade have already learned what they are supposed to learn in the previous grades and thereby assumes that the children's foundational skills are in place. On the contrary, ASER testing tools attempt to assess a child's minimum learning levels or basic educational skills. Tests under ASER are administered at the household level. This is done to ensure:

- Capturing children across all forms of schooling (government, government-aided, and private), including many low-cost unrecognized private schools operating throughout the country.

12. Pratham is an innovative learning organization created to improve the quality of education in India. As one of the largest NGOs in the country, Pratham focuses on high-quality, low-cost, and replicable interventions to address gaps in the education system.

- Capturing children who might be out-of-school, dropouts, or currently not enrolled, who would be excluded in a school-based survey.

Sampling design and survey process

ASER is a citizen-led survey and is therefore administered via volunteers across the country. These volunteers generally belong to universities, NGOs, and self-help groups (SHGs)[13]. In recent years, ASER has also tied up with District Institutes of Education and Training (DIETs) established in each district of India to conduct the survey. Roughly 25,000 volunteers are enlisted to administer the ASER tool to 650,000 children every year. In each surveyed village, the ASER survey is conducted over two days – with the first day (preferably a Saturday) focused on the school-level survey and the second day the household survey. Before beginning the survey, the surveyors meet the sarpanch or village representative to explain the purpose of ASER and get permission to survey the village. The surveyors then visit a government school that has primary classes (Grades 1 to 8 or Grades 1 to 4 or 5). If the village has more than one government school, the school with the highest enrolment is chosen. Permission to conduct the survey is received from the head teacher or the most senior teacher.

The latest ASER survey was conducted in 2016, and covered 589 districts across all states and union territories (UTs) in the country. In each district, 600 households are surveyed across 30 villages. Thereafter, 20 households are covered in each village. Villages are selected on the basis of random sample using probability proportional to size (PPS)[14]. Until 2014, the village directory available from the 2001 Census of India was used as a sampling frame for all ASER surveys. Since 2016, Census 2011 has been used as the sampling frame. The sample design employs a rotating panel of villages. Every year, out of the 30 sampled villages selected from a particular district, 10 were new (not covered in the earlier year), 10 were from those covered in the previous year, and the remaining 10 were from the list covered two years prior.

After understanding how the village is laid out, surveyors divide the village into four sections (for a continuous village) or randomly select four hamlets (in villages where the population is organized in hamlets). Five households are selected from each section or hamlet using the '5th household rule'[15] from each selected section or hamlet. In each sampled household, the following data are recorded: (1) basic household information, (2) information of children in the age group of 3 to 16 years, and (3) ASER testing tools to assess basic reading and arithmetic skills of all children from 5 to 16 years who reside in the household. In 2017, ASER started to focus on children in the age group 14 to 18 years and also collect information in several other areas related to their preparedness to lead useful and productive lives as they move beyond the elementary school age.

ASER survey monitoring and data validation process

Given the large sample size, ASER follows a two-step mechanism to ensure data quality. The steps are:

- **Monitoring:** The survey schedule is planned to allow for adequate monitoring of data. Each district gets covered in two consecutive weekends, which allows the ASER-appointed master trainers to personally monitor the survey in three or four

13. SHGs are local voluntarily created groups of people, consisting of the rural poor (mostly women), who participate in savings and credit activities to meet both emergency as well as entrepreneurial needs. Members of an SHG often collectively save and take loans from banks (microcredit). An SHG may consist of 10 to 20 members on average and can be either registered or unregistered with government. One of the key objectives of creating SHGs is to enable the rural poor to collectively establish entrepreneurial activities for their overall development.
14. PPS is a widely used standard sampling technique when the sampling units are of different sizes.
15. The 5th household rule refers to the process by which surveyors find the centre of a hamlet and choose the 5th household found on the left, proceeding in a circular motion.

villages. Such an exercise in each district allows capturing more than 10 per cent of the total sample.

- **Rechecking of data:** For the 2014 ASER survey, there were four processes developed to recheck the collected data. These are presented in *Table 6.*:

Table 6. Processes for rechecking data

SMS recheck	Phone and desk recheck	Master trainer field recheck	Process audit
A summary of district-level data sent via SMS and uploaded on a common portal, allowing for the assessment of data quality in real time and identifying locations where additional checking such as revisiting households and conducting the tests is warranted.	Contacting listed households to confirm the visit of an ASER surveyor. Additionally, master trainers review survey formats received for all surveyed villages.	Based on the information from the desk and phone recheck process, villages are identified for field rechecks wherein 50 per cent of all surveyed households are rechecked using key parameters.	Audit teams observe state and district trainings alongside the actual survey in a sample of villages to assess whether procedures are implemented as envisaged.

Assessment tools and process

The ASER tools are designed as easy to use, simple, and quick to administer, and include both reading and mathematics tools. The tools consist of a set of four items in ascending order of complexity: letters, words, a paragraph, and a story for the verbal tool; and digit recognition, two-digit number recognition, two-digit number subtraction and three-digit by one-digit division for the quantitative tool. Children are marked at the highest level that they can complete comfortably.

ASER reading tool

The ASER reading assessment tool consists of four levels: letters, words, a short paragraph (Grade 1 level text), and a longer 'story' (Grade 2 level text). Children are marked at the highest level that they can do comfortably. *Figure 10* and *Figure 11* present a snapshot of the ASER reading tools for English language.

ASER mathematics tool

The ASER mathematics tool consists of four levels: number recognition (1-9), number recognition (11-99), two-digit subtraction with borrowing, and three-digit-by-one-digit division. Children are marked at the highest level they can do comfortably. A child who is unable to do the first level will be marked at a level called 'beginner'. *Figure 12* and *Figure 13* present a snapshot of the ASER mathematics tool.

Dissemination of ASER survey results

ASER findings are disseminated extensively at the centre and state levels, and in a limited manner at the district level and community level.

Every year, during the first or the second week of January, the all-India report based on the ASER survey results is released at a national-level launch in New Delhi. The national launch is covered via a webcast as well.

The national release is followed by official state releases. All releases are well covered through print, television, and electronic media. In many states, workshops are organized by the ASER team to disseminate and explain the state-specific findings. They are also used as a platform for dialogue and discussions on learning levels among key educational administrators. ASER shares its report with all partner organizations.

Figure 10. ASER English assessment tool

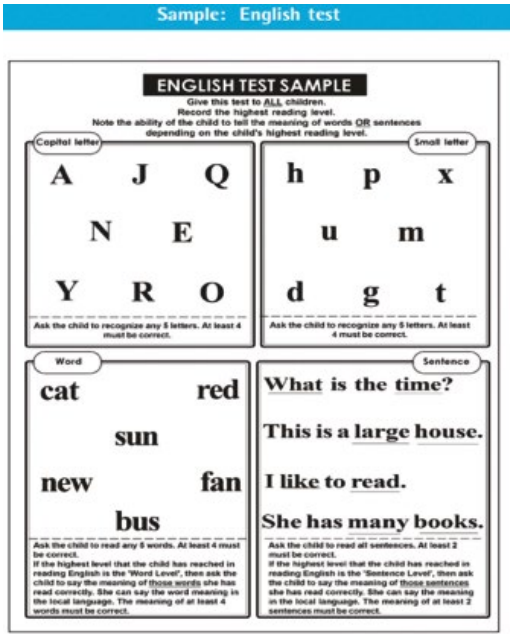


Figure 11. Assessing basic English-language understanding

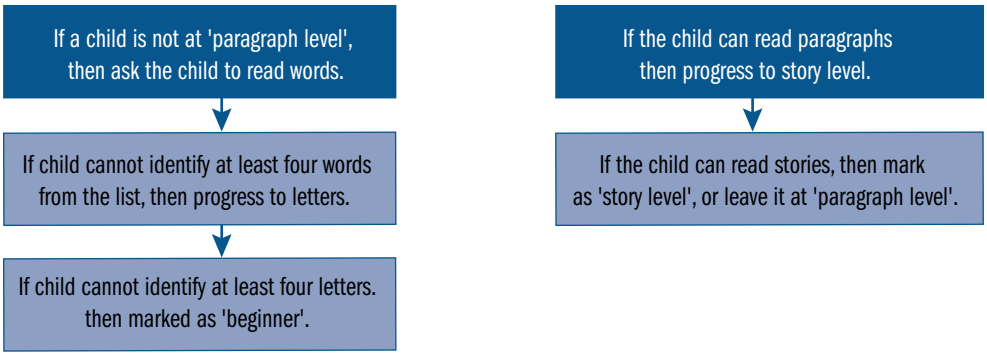


Figure 12. ASER mathematics assessment tools

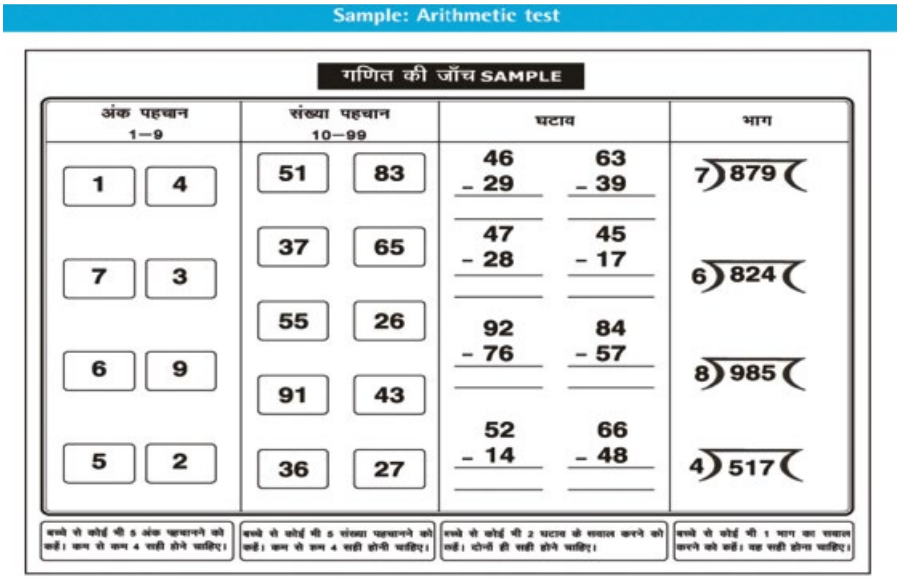
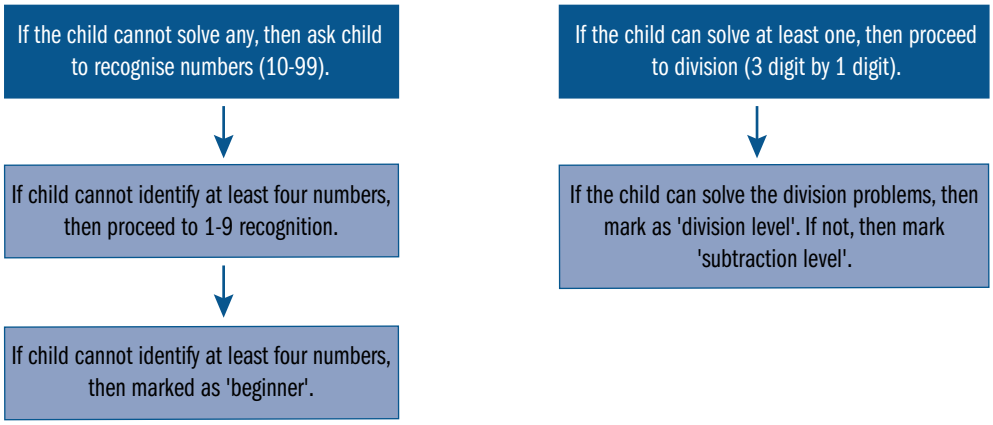


Figure 13. Assessing basic mathematical understanding



While there is no grass-roots level dissemination per se, a unique feature of the ASER data collection process is that dissemination happens simultaneously. The ASER survey is conducted in the presence of parents or another adult in the household and the results of the tests are shared with them on the spot. Even though there are no published reports available on parents' reactions to this dissemination process, interviews with the ASER officials across the three surveyed districts revealed a number of instances when parents got alarmed about their child's learning level when the ASER test was administered. In fact, using the ASER test information, some parents even visited the head teacher of the school to discuss the poor learning level of their children. The village head is also informed about the survey in all sampled villages. During our interactions with ASER staff, it was stated that the lack of resources is a major reason for the lack of any grass-roots level dissemination. They feel that community-level engagement is crucial but it will take some time for ASER to follow this path. The director of the ASER Centre also confirmed that dissemination at the district level is also often constrained owing to lack of manpower and resources.

However, in villages where ASER was not conducted, only a few parents and teachers had heard about the ASER survey. This could, however, be due to the fact that ASER is conducted in only 30 villages per district and 20 households per village, and thus it is difficult to know whether the household we surveyed was in the ASER sample.

Impact of ASER survey findings in education planning

At the centrepiece of educational debates in India lies the importance of gauging learning outcomes in schools. While MHRD does not quote ASER findings explicitly, many state governments have done so. As one of the pioneers in gauging learning outcomes, ASER has certainly played a significant role in influencing policy decisions. The growing trend among state-level assessments to adopt certain characteristics unique to the ASER tool tends to demonstrate its growing influence.

As part of this study, when we spoke to the state planning heads of SSA, they did mention that ASER findings give them a sense of learning levels of children in their states. Of the three state governments that we visited, two of them (Himachal Pradesh and Madhya Pradesh) have formally adopted the ASER methodology of testing basic learning levels of children into the government elementary education system under SSA with active consultations from Pratham, which originally started the ASER survey. For instance, the PRERNA initiative (see *Box 2*), a combined effort between the district administration (elementary education), SSA, and Pratham, which uses the ASER testing tools to identify learning levels and provides remedial classes, has been adopted by SSA as its own. PRERNA is now administered across all the primary schools in the state. Similarly, the Madhya Pradesh government has taken up a modified version of the ASER tool after consultations

with Pratham to test the basic learning levels of children and give them remedial classes across all elementary schools. This initiative is called Baseline-Endline (see *Box 3*), and it has been adopted as an integral part of the SSA.

Further, during the team's interaction with officials in Himachal Pradesh, it was found that certain ASER data points are directly quoted in the planning process. In Rajasthan, ASER is directly quoted in the SSA module developed to address learning needs of students (initiated by the Rajasthan Council for Elementary Education). Further, ASER's tie-up with DIETs in eight states is an example further highlighting their growing outreach in India.

ASER data have been cited in a range of government documents, including:

- Chapter 20: Education and skill development (p. 131) of Niti Aayog's draft *Three Year Action Agenda 2017-18 to 2018-19*.
- The *Economic Survey 2016-17*, presented in parliament on 31 January 2017, cites ASER 2014 data to highlight the low learning outcomes in primary education in the chapter 'Review of economic developments' (pp. 162–163).
- The *Economic Survey 2015-16*, presented in parliament on 25 February 2017, quotes ASER data to state that the social infrastructure scenario in the country reflects gaps in access to education in the chapter 'Social infrastructure, employment and human development' (pp. 193–194).
- In the 12th Five-Year Plan (2012-2017), the chapter on education defines mastery of basic learning as an explicit objective of primary education. It also emphasizes the need for regular assessment to ensure that goals are being met (p. 53).
- ASER is cited in the Planning Commission's approach paper to the 11th Five-Year Plan (2007-2012).

3.3 National Achievement Survey

The NAS is a sample-based survey designed to do a 'health check' of the Indian education system and to provide information on key learning achievements of students (Educational Survey Division, 2017). The survey is independently conducted by NCERT across the country with a view to inform evidence-based policy-making as well to provide information to improve classroom learning. According to the most recent NAS reports, the key objectives of the NAS are as follows:

1. to evaluate the academic achievement level of students in different subjects and at different levels of education;
2. to study the impact of geographical location or area, gender, and social groups on achievement level;
3. to analyse the effect of intervening variables such as home, school, and teacher on students' achievement.

High enrolment numbers and an inclusive set-up do not necessarily translate into quality education imparted in schools. Education quality can be measured through an assessment of the learning levels of students. A standardized assessment of students at the national level provides an estimate on the status of educational learning in a country. For this purpose, NCERT developed NAS. Introduced in 2001, the objective of NAS was to provide grade-specific learning-level scenarios at the national and state levels. It gauges the learning levels of students across grades in language, arithmetic, and environmental science. The overall objective is to provide policy planners with adequate data to identify gaps in learning and devise appropriate strategies to address these.

Box 2. Program for Result Enhancement, Resource Nurturing and Assessment (PRERNA), Himachal Pradesh, India

- The PRERNA initiative was conceptualized with an objective to assess and address the learning levels of children in primary schooling. The term 'Result Enhancement' in the programme name refers to constant assessments/evaluations in identifying possible learning gaps and developing measures to address them. The term 'Resource Nurturing' refers to the inclusion of teachers as stakeholders who need to be trained and/or nurtured to increase the effectiveness with which they impart learning.
- It was initially piloted in one district of Himachal Pradesh called Hamirpur in 2015. Based on the ASER 2014 findings, the district magistrate at Hamirpur invited the Pratham team to undertake a pilot learning level assessment of students in a sample of 60 schools covering all children from Grades 3 to 5 using the ASER tools.
- For 2016/2017, PRERNA was administered in all the primary cluster schools across the state and covered children from Grades 1 to 5, and was run by the state government and SSA. For 2017/2018, the programme is scaled up to add English language, named PRERNA Plus, and is being administered in all primary schools of Himachal Pradesh.
- Teachers are considered as the nodal stakeholders in this intervention with all activities designed around them.

Implementation process

- A baseline test is designed to gauge the learning levels of students in the subjects of Hindi (language), English, and mathematics. Based on the baseline test, learning gaps are identified by teachers. Students are grouped based on their learning levels.
- Teachers undertake training to implement remedial classes for various groups. The remedial classes are conducted for 45 days, for two hours every day, after which an endline test is administered to measure progress.
- The training–teaching approach is meant to be a continuous affair and not limited to the results of the baseline. It is meant to remain as a work in progress.
- To standardize the performance of schools, a performance index was developed which allots single figures to the learning levels of students under each subject; the index can be used to compare performance across schools.
- The parameters selected are reading a story (fewer than two mistakes), reading a sentence (fewer than two mistakes), two-digit-by-one-digit multiplication, and three-digit-by-one-digit division. These are used for both Grades 3 and 4. Each school is finally assessed on eight parameters.
- A score of one (1) is given if 80 per cent of the students are successful in a parameter, a score of negative one (-1) if less than 50 per cent of the students are successful, and a score of zero (0) if 50 per cent to 80 per cent of students are successful. The scores are not made available to the general public.
- A school's performance can range between 8 (maximum) and -8 (least). A school's performance is assessed as *excellent* (if score >= 3), *average* (if the score is between -4 and 2), or *poor* (if score <=-5).

Monitoring and structure

- There have also been a number of provisions made to ensure that the focus areas identified under PRERNA work in parallel with general schooling, and a number of measures have been developed to strengthen the ties among students, teachers, parents, and other community-level stakeholders. For instance, teachers have been instructed to prepare specific strategies for weak students to make teaching interesting to motivate the students towards studies.
- Educational administrators and their designated support staff continue to monitor teachers and schools for ensuring adherence to PRERNA activities.

NAS as it was until the year 2016

NAS has been conducted for Grades 3, 5, 8, and 10, that is, the critical stages of education: early primary, end of primary, upper primary, and secondary levels. NAS is conducted every two to three years and provides detailed information on learning outcomes, which is useful for teacher training, curriculum development, and improving quality of education.

Based on the grade syllabus and textbooks from across the country, tools were developed to test subject-specific abilities of the students in the sampled schools. Additionally, three questionnaires on 'school, pupil, and teacher' are administered in the schools to capture background information on factors, such as school environment, qualification of teachers, and home background of students, that could impact the results of the survey. Though the earlier used method of data analysis was classical test theory, NAS has now moved towards the use of item response theory (IRT). According to the latest report for Grade 10, the scaled scores are obtained by transforming the raw scores into a common scale. The scaled score then provides a standardized value which is comparable for all the tests within a subject. The use of IRT analyses allows test difficulty and student ability to be reported independently on the same scale. The Central Board of Secondary Education also introduced a test called Problem Solving Assessment for students in Grades 9 and 11 from the year 2013, which gives students an exposure to application-oriented testing.

The NAS findings are published in its annual report in which only national- and state-level scenarios are presented. NAS is exclusively conducted in government and government-aided schools. The most recent NAS (2014) collected information from a sample of more than 104,000 students in 7,046 schools across 34 states and UTs. Over the years, NCERT has enhanced the technical design of NAS by introducing analysis techniques that enable a comparison of student performance over time. This has been done to remove unnecessary time lags and disseminate results to states in a timely manner, so that data/information can actually be used within the policy-making and planning process. To provide a more localized context, the MHRD has developed provisions for financial support to states for conducting a State Level Achievement Survey (SLAS), and many states have conducted SLAS for a few years. While NAS can provide useful insights at a national level, SLAS enables a focus on regional nuances based on each state's pedagogical practices. SLAS has received acclaim for being the pioneer for such state-level assessments in states such as Gujarat (which uses Gunotsav), Madhya Pradesh (Pratibha Parv), and Himachal Pradesh.

New structure for NAS from 2017 onwards

From 2017 onwards, NAS is conducted across all districts in India every year. For this purpose, NCERT has developed a set of learning outcomes for each grade and subject, which have been incorporated now as a part of the RTE. The document is in Hindi and English, and has been translated into different languages in collaboration with the state departments of education and has been shared with them. The NAS results would be presented in comparison with these learning outcomes.

With NAS being used as the common yardstick for success, it is expected to allow every district and state to integrate its results within their respective planning processes. The revised NAS was conducted in November 2017 in government and government-aided schools across the country and the first set of results in terms of 'NAS District Report Cards' were published online in January 2018. Some of the key characteristics of NAS from 2017 are as follows:

Coverage: For NAS 2017, the national school sample drawn through the PPS methodology includes nearly 2.2 million children from 120,000 schools spread across all districts in India. This will eliminate the need for SLASs conducted by a few states, thus the budget provision for SLAS under SSA will be removed. Students of all 703 districts of India will be tested.

Box 3. Baseline-Endline, Madhya Pradesh

- The Baseline-Endline initiative under the SSA in Madhya Pradesh was introduced for the academic year 2017/2018, for all primary and middle schools in the state.
- The objective of this initiative is to bring all children up to the basic proficiency levels (this is not specific to their class), and to improve learning outcomes.
- Pratham, the parent organization behind ASER, has been involved in the entire design process of this exercise and has basically used ASER tools (with slight modifications where necessary) for testing foundational learning levels of children in a school.

Implementation in schools

- Hindi, English, and mathematics tests are to be conducted to evaluate the proficiency of students studying in Grades 2 to 8 at the beginning of the academic year.
- Based on the test scores, the students will be divided into groups based on their proficiency.
- Special (remedial) classes will be held for groups that need it. For Hindi and English, the objective is to improve reading skills; for mathematics, to improve identifying numbers and proficiency in the use of mathematical operators.
- Students are not to be placed separately, apart from remedial classes. There is an emphasis on maintaining a positive mood among students.
- After a month of remedial classes, an endline test is conducted for all children from Grades 2 to 8 to check progress.
- After the endline test, a comparative analysis of the progress made in basic proficiency in the three subjects is conducted.
- The analysis also extends to the efforts made in schools to improve basic proficiency levels, and issues are to be discussed in the monthly CRC meeting.

Record-keeping and monitoring process

- All class-specific records from the baseline and end-line tests are to be maintained with the principal, and all child-related information should be maintained with the class teacher, to aid monitoring.
- The proficiency level of students, along with details of the effort made by teachers to improve learning, will be shared with guardians during teacher–guardian meetings.
- The efforts made to improve learning and outcomes are to be monitored and analysed periodically at all levels.
- Teachers are not granted leave during this baseline-endline process. During this period, attendance in schools needs to be kept at a maximum.
- According to the guidelines, if the above points are not taken into account, then a disciplinary process is to be initiated against violators.

Grades covered: Learning assessment for Grades 3 and 4 in language, mathematics and environmental science and for Grade 8 in language, mathematics, science, and social science. Apart from this, to derive an understanding of factors influencing learning, students' contextual and school background information was collected through three questionnaires – a pupil questionnaire, a teacher questionnaire and a school questionnaire.

Sampling: NAS will cover Grades 3, 5, and 8 in every district, with 30 students per grade. For conducting the tests, 51 schools will be selected for Grade 8 and 61 schools were selected for Grade 3 and for Grade 5.

Level of reporting: Since sampling design is being done at the district level, the results of the survey were representative at the district level.

Data collection: Test answers will be filled-in optical mark reading (OMR) sheets. These OMR sheets will be scanned at district SSA offices and uploaded to a software that will generate the district-level reports.

3.4 Overall comparison: U-DISE, ASER survey, and NAS

U-DISE, which is a government-led initiative, until now has been the only data source in India providing school-level information and more specifically, school report cards. U-DISE collects data on a variety of important aspects of a school including school profile (management, sources of funding, school type, language of instruction, etc.), enrolment, teachers, infrastructure provision under RTE, examination results, and constitution and functionality of SMCs. On the other hand, ASER and NAS are two different mechanisms for measuring learning levels of children. The findings from these two surveys are not presented at school level and thus are not school-specific findings. Both ASER and NAS are sample surveys and the findings are representative at the national, state, and district levels (district-level representation expected from 2017 onwards for NAS). The ASER survey, which is a civil-society-led initiative, attempts to assess the basic minimum learning levels of children irrespective of their grade, type of school, or status of enrolment in rural areas of the country. NAS, on the other hand, is a government-led initiative that does grade-specific learning level assessment of students studying only in government or government-aided schools (see *Figure 14*).

Figure 14. Overall comparison: U-DISE, ASER, and NAS

U-DISE	U-DISE	U-DISE
• Covers almost all Indian schools across rural and urban areas • Covers all of India, all geographical units • Information about each school is collected on different aspects such as enrolment, teachers, facilities available etc. • Designed and implented by Government of India through NIEPA and SSA structure • School data are publicly available online across years	• Sample survey conducted across selected households in rural areas only • Covers all rural districts • Is a learning assessment survey that measures basic learning levels of children irrespective of their grade or enrolment in schools • Designed and impleted by ASER, a civil society led initiative • National-, state- and district-level findings and/or reports are publicly available online and offline	• Sample survey conducted across government and government-aided schools across both rural and urban areas • Covers all districts: rural and urban • Is a grade-specific learning assessment survey • Designed and implented by Government of India through NCERT • National- and state-level findings are available; district-level results expected from 2017 onwards

4. Accountability framework in India's public education and role of U-DISE

As mentioned in *Chapter 2*, accountability entails two components working in conjunction: a system of institutions designed in a manner that make accountability possible, and an informed and mobilized citizenry that can draw upon platforms for engagement to make accountability demands on the system. Unfortunately, the accountability loop in India's education system is deeply flawed and broken. This chapter first describes the specific accountability model in the Unified District Information System for Education (U-DISE) and the conditions necessary for its success. It then tries to unpack the extent to which these conditions have been met across different domains of accountability.

4.1 Public-participation model of accountability in India's education system

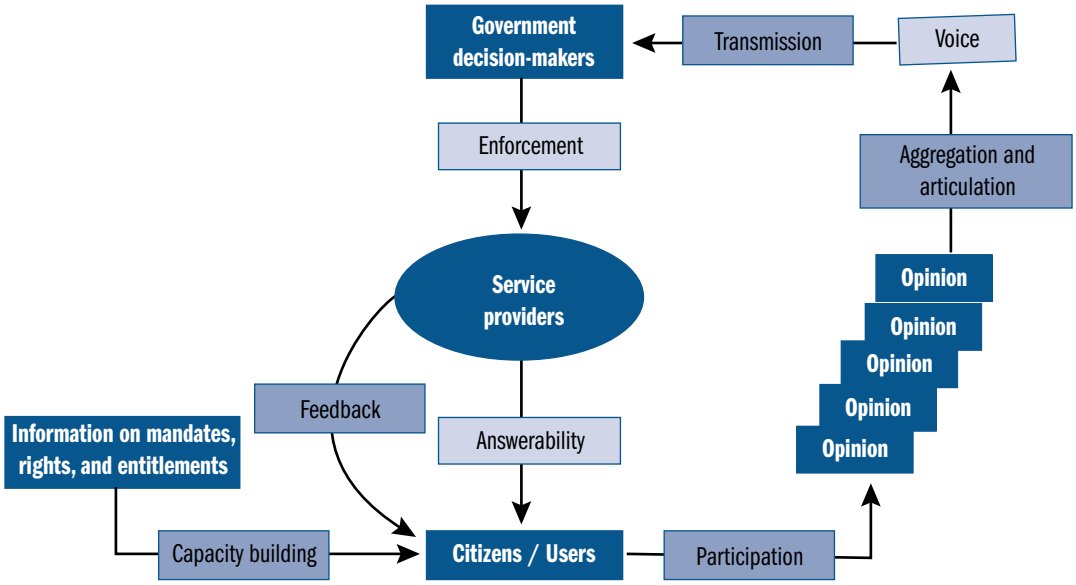
Public education is a service delivered by the government towards citizens (more specifically, students), who can be regarded as consumers of this service. In India, the primary pathway laid out for accountability in public education is the public-participation model. For a public-participation model of accountability to become effective, certain essential conditions need to be addressed. When accountability is sought through citizen engagement, the approach is known as social accountability. The World Bank has defined social accountability as 'an approach towards building accountability that relies on civic engagement, i.e. in which it is ordinary citizens and/or civil society organizations who participate directly or indirectly in exacting accountability' (Malena, Forster, and Singh, 2004: 1). *Figure 15* describes the different components and actors involved in an effective social accountability structure with respect to public service delivery.

As can be seen in *Figure 15*, the public-participation model of accountability requires three essential components: voice, enforceability, and answerability (Camargo, 2013). 'Voice', in this context, refers to individual opinions of citizens being aggregated, articulated, and eventually transmitted to the relevant authority or decision-makers who can act upon the information. For voices of citizens to be relevant and transmitted, they should have knowledge of their entitlements, legal mandates to support them, and duty-bound public officers or front-line providers. They should also have adequate access to information about the quality of education and schools. 'Enforceability' refers to the execution of consequences when certain mandates are not adequately fulfilled by service providers. This is an important factor shaping the incentives of service providers to respond to citizen needs. The accountability framework is likely to function better when there are formal disciplinary actions taken in case of non-performance and also a system of rewarding efficient performers. 'Answerability' can be understood as the obligation of the service provider to provide an account (the right of the citizens to get an answer) of the steps being taken to address the issues raised by citizens.

Accountability routes specifically using U-DISE

At the core of the accountability structure in the government schooling system in India are parents. The accountability model is designed to start with the school management committee (SMC), of which parents are members. Administrative accountability is sought through the layers of bureaucratic hierarchy. However, in the final analysis, the accountability of the school system is designed to be responsive directly to the SMC, and through this to parents. Ideally, in this public-participation model, the public exerts pressure on schools by regularly monitoring performance in their functioning. The public may provide suggestions or may make other contributions to achieve better learning

Figure 15. Components and steps involved in effective social accountability initiatives



Source: Camargo, 2013.

outcomes, and schools have to be responsive towards such suggestions. This can be understood as a sort of democratization, through the involvement of all stakeholders at the school level.

To achieve this, public accountability using U-DISE is primarily sought through two mechanisms: (1) placing U-DISE data in the public domain, and (2) making U-DISE data the foundation for school-level decision-making by the SMC. Both of these are discussed below.

Public access to data

The primary mechanism for inviting public participation to improve accountability in school education is by making U-DISE data available in every school for public view in the form of annual school report cards. A discussion with the head of U-DISE revealed that schools are supposed to receive a final copy of the U-DISE school report card from the Sarva Shiksha Abhiyan (SSA) Block Resource Centres (BRCs) once the data are checked, verified, and finalized from the centre. The purpose behind this is to have some key indicators about the school, presented in a simplified manner, and to make them available to parents and community members for viewing whenever they visit the school.

Local participation and decentralized decision-making

As part of the Right of Children to Free and Compulsory Education (RTE) legislation passed in 2009, specific provisions have been made for parents and local communities to play their due roles in shaping and running schools in the form of SMCs and preparation of school development plans (SDPs). An SMC comprises teachers, parents, and local leaders, with a parent elected as the chairperson. Democratization of school-level decisions is expected to be achieved through the creation of SMCs in every government elementary school in India. Authorization of tasks, such as the spending of school funds, has to be verified by the committee and requires the signatures of both the SMC chairperson as well as the head teacher. The SMC membership is renewed every one to two years, depending on the state. Ideally all information filled in U-DISE Data Capture Formats (DCFs) should be shared with SMC members in SMC meetings as part of the social audit process. All the SMC members, especially parents and community leaders, have the option to raise their concerns and provide suggestions.

SMC meeting

Challenges in the accountability route using U-DISE

In the context of India's public education system, many of the essential conditions that exist in the theoretical framework of accountability are actually missing in practice. There are roadblocks at almost every linkage of the accountability route, eventually leading to an accountability loop that is not closed. Based on the experience from the field survey, some of these roadblocks are highlighted below.

Lack of access to data: While regular, reliable, credible information is the bedrock of this accountability route to work by enhancing citizen voice, there are significant gaps in practice. Except for one or two schools in Solan district, none of the sampled schools in the other two districts received the final copy of the school report card from the block offices. In the Sagar district, all the surveyed schools acknowledged that they did receive a one-page school report card within a few days of submitting the U-DISE data for verification, or to correct any discrepancies found. However, they generally do not receive a final copy of the U-DISE school report card generated from the software once the data are verified and finalized by the state and then finally by the National University for Educational Planning and Administration (NUEPA). None of the schools were even aware that they are supposed to receive a copy of this. The fact that the final version of the school report card is not sent back to the school also raises concerns about the process of data verification.

Limited awareness of rights and entitlements: Interviews with community members and parents reveal that their knowledge about entitlements regarding the RTE norms for basic school facilities, rights and responsibilities of SMC members concerning the SSA guidelines, and the right to access any public information through the Right to Information (RTI) Act is considerably low. Similarly, more than 90 per cent of parents did not know about the existence of U-DISE school report cards that could potentially be used as a tool for demanding accountability from schools.

Lack of collective action: Another big challenge is the absence of a collective voice. While the SMC platform does exist, it was observed that it is usually the SMC chairperson, the head teacher, and sometimes another teacher who attend the SMC meetings. Apart from the SMC chairperson, other parents in the SMCs are not aware of most decisions being taken at the school. Since most of the parents who are part of the SMCs do not

regularly attend the meetings, the practice of collective decision-making or opinions being aggregated to form a collective voice is very rare. Again, parents are mostly unaware about the formal route for taking their complaints to relevant government functionaries.

Limited use of data: There are no adequate mechanisms to ensure regular data use, which in turn impacts the incentive to participate and also the quality of data. There are no effective monitoring mechanisms to assess performance, and U-DISE data are rarely used to monitor effectiveness. In the absence of rewards or punishments, questions arise with respect to answerability in the case of non-performance or even with respect to data quality.

Limited provision of enforceability: Although there is a legal obligation for public schools to provide certain minimum services through the RTE Act, there is no mechanism for enforceability of this. As a result, if a school is not providing facilities as stipulated in the mandate, it cannot be held responsible.

Absence of a formal grievance redressal mechanism: Under Section 32 of the RTE Act, any person having any grievance relating to the right of a child under the act may make a written complaint to the local authority with jurisdiction, and any person aggrieved by the decision of the local authority can refer an appeal to the State Commission for Protection of Child Rights (SCPCR) or the authority prescribed. Thus, the act has made local authorities the grievance redressal agencies and the SCPCRs the appellate bodies at the state level, but that is not sufficient to establish the modalities through which violations can be dealt with. According to Bhatty, 'A well-defined institutional mechanism for grievance redress involves a system of registering, investigating, and responding within a well-appointed time frame' (Bhatty, 2012: 1).

After five years of implementation of the RTE Act, the government made an amendment to the law in 2015 and laid out a grievance redressal mechanism – but only for teachers (RTE Rules 21A). Under the amendment, any teacher can register his or her grievance in writing at four levels: the school level (SMC), block level, district level, and state level. In case of non-receipt of response or unsatisfactory response from one level, a teacher can approach the committee at the next level. Even though the act has specifically laid out this mechanism for the teachers, a similar mechanism can also be implemented for parents or community members to address any grievance that they might have related to a school or the education of any child enrolled in school. At present, there is no clear-cut mechanism or legislation for grievance redressal by parents and as a result, the issue of the demand for accountability by the public gets diluted.

4.2 Domains of accountability targeted in U-DISE

In theory, U-DISE data have the potential to target three key domains of accountability: financial, management, and pedagogical accountability. Each of these is discussed in detail below.

Financial accountability

There are two broad aspects to financial accountability. The first is internal accountability between the government and the service provider. While the government is financially accountable to the service provider (in this case the school) to ensure that it receives resources based on its needs in a timely manner, schools are also accountable towards the government in terms of properly utilizing funds. The second important aspect of the financial accountability relationship is between parents and the school. The school should be accountable towards parents for transparent spending of financial resources based on actual needs. Proper utilization of funds is essential for the timely delivery of crucial services that have a major impact on human capital formation.

In order to understand the extent of financial accountability under U-DISE, it is important to first understand the planning and budgeting process under SSA – the primary vehicle for the Government of India (GOI) to deliver elementary education in India. SSA offices at various state, district, block, and cluster levels are responsible for the U-DISE data collection and validation process.

Planning and budgeting process under SSA

Budgetary allocations under SSA are determined on the basis of a planning and budgeting document known as the Annual Work Plan and Budget (AWP&B). According to the planning procedure developed by GOI, the AWP&Bs ought to be developed through a decentralized model under which plans are first prepared by schools (or SDPs) before being aggregated up to the block level and then the district level. At the district, a district planning committee prepares a district-level AWP&B. The district plan is then aggregated at the state level for the formulation of the state AWP&B (Ministry of Human Resource Development, 2010). The states then individually present their AWP&Bs to, and then and discuss them with, the Ministry of Human Resource Development (MHRD). The proposed budget is appraised by the Planning and Appraisal Board of MHRD and subsequently funds are approved.

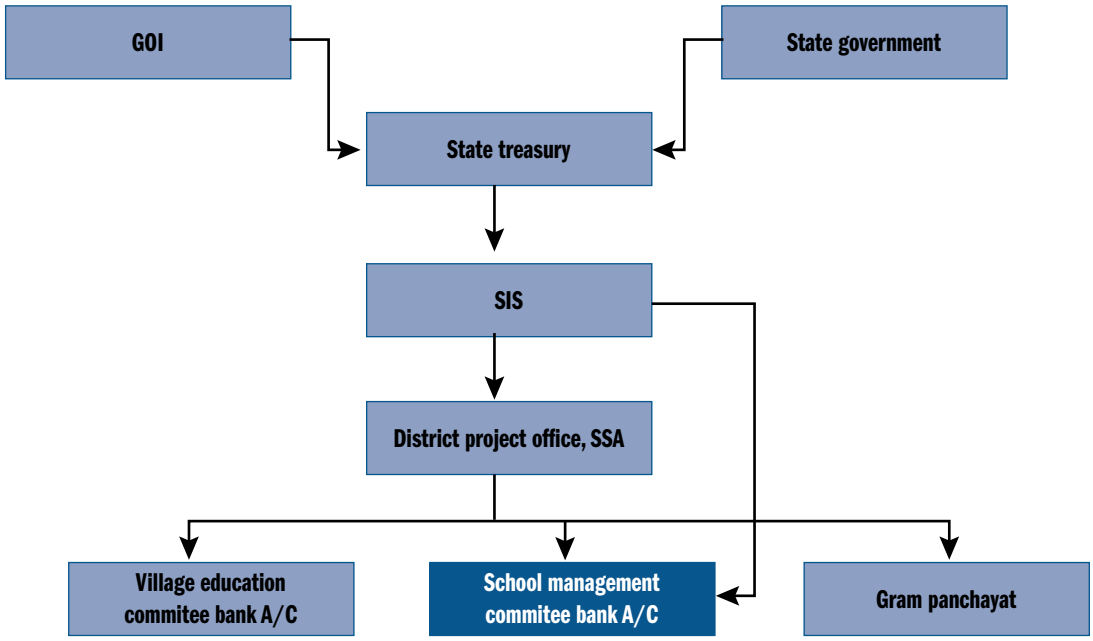
The budget for SSA is distributed across a range of activities including teacher salaries, school infrastructure, campaigns for improving enrolments and attendance, and the provision of direct entitlements to children. The bulk of these SSA funds are controlled and spent by the education bureaucracy at the subnational level. At the front line, schools receive a small proportion of funds: 3-6 per cent of the total SSA financial budget, known as school grants. These are annual grants, universally transferred to all schools in the country.

GOI also clearly lays down a detailed process of fund flows from the centre to the states. Until 2013/2014, funds for SSA were released directly by GOI and state governments to autonomous implementing bodies known as State Implementation Societies (SIS). In 2014/2015, a new fund flow mechanism was introduced. Under this system, GOI allocations are first released to the state treasury. Money is then routed to SIS. The SIS is supposed to release the funds to districts within 15 days of their receipt from GOI and the state government. Districts in turn are supposed to advance funds within 15 days of receipt from the SIS. The district education officer then sends the grants onwards to the schools. All funds to be used for upgrades, maintenance, repair of schools, teaching and learning equipment, and local management must be transferred to SMCs/gram panchayats or any other village/school-level arrangement, according to the decentralization norms adopted by that particular state or union territory. It should be noted here that there are state-level differences in the fund flow system. For instance, in the state of Madhya Pradesh, where the fieldwork was conducted in Sagar, SSA funds are released from the state directly to schools (*Figure 16*).

The second aspect of financial accountability is at the school level. The expenditure of the SSA grants received by schools is expected to be undertaken in consultation with SMCs, which have the responsibility of monitoring expenditures to ensure accountability. In fact, in order to spend any school funds, it is mandatory to have the signatures of both the head teacher as well as the chairperson of the SMC. Under Section 21 of the RTE Act:

> A school, other than a school specified in sub-clause (iv) of clause (n) of section 2, shall constitute a School Management Committee consisting of the elected representatives of the local authority, parents or guardians of children admitted in such school and teachers: provided that at least three-fourth of members of such Committee shall be parents or guardians: provided further that proportionate representation shall be given to the parents or guardians of children belonging to disadvantaged group and weaker section: provided also that fifty per cent of members of such Committee shall be women. (Ministry of Law and Justice, 2009)

Figure 16. SSA fund flow mechanism



The RTE Act envisages every SMC performing the following activities: (1) monitor the working of the school, (2) prepare and recommend a school development plan, (3) monitor the utilization of the grants received from the appropriate government or local authority or any other source, and (4) perform other such functions as may be prescribed.

SMC meetings are meant to be held every month, and any decision regarding the expenditure of school grants must be taken collectively in consultation with SMC members including parents and community representatives. Most importantly, the total quantum of expenditure for key annual school grants has to be included in the U-DISE DCF every year, and these data are available for public view. SMC members can ideally access this information and ask for an explanation from the school administration if any discrepancy is observed. Thus, the domain of financial accountability is to a degree embedded in the usage of U-DISE data.

Management accountability

A school is accountable for management when it is responsible and answerable for all management related activities such as teacher recruitment, supervision of teaching and learning, teacher attendance, staff development, reporting to parents, among others. Teacher absenteeism often plagues public schools in developing countries, and therefore management becomes the key in the delivery of education to students. The appropriate management of teachers becomes the fulcrum that can actually improve outcomes.

The RTE Act lays down some important norms and standards relating to school management, such as pupil/teacher ratios (number of children per teacher), student/classroom ratio (number of students per classroom), teachers' qualifications, and number of school–working days. The act provides for rational deployment of teachers by ensuring that the specified pupil/teacher ratio is maintained in each school. Under the act, the pupil/teacher ratio at the primary level should be 30:1, and 35:1 at the upper primary level. Most of these indicators are captured through U-DISE data collected from each school. Moreover, RTE mandates appointment of qualified and trained teachers.

Section 21 of the RTE Act, which covers qualifications for appointment and terms and conditions of service of teachers, states:

> (1) Any person possessing such minimum qualifications, as laid down by an academic authority, authorized by the Central Government, by notification, shall be eligible for appointment as a teacher.
>
> (2) Where a State does not have adequate institutions offering courses or training in teacher education, or teachers possessing minimum qualifications as laid down under sub-section (1) are not available in sufficient numbers, the Central Government may, if it deems necessary, by notification, relax the minimum qualifications required for appointment as a teacher, for such period, not exceeding five years, as may be specified in that notification:
>
> Provided that a teacher who, at the commencement of this Act, does not possess minimum qualifications as laid down under sub-section (1), shall acquire such minimum qualifications within a period of five years. (Ministry of Law and Justice, 2009)

Over and above these mandates, the RTE Act has empowered the SMCs to monitor the functioning of schools and to prepare SDPs keeping in mind specific management-related needs of schools.

Pedagogical accountability

Pedagogical accountability is a necessary step to ensure that children do not simply attend schools but actually learn. A school is accountable for pedagogical aspects when it can be held responsible and answerable for students' skills, knowledge, behaviour, performance, and learning levels, especially in basic subjects such as language and mathematics. Even if teachers are present in schools and regularly take classes, students may still not be learning and improving.

In India, central and state governments have been conducting assessment tests in order to determine learning outcomes, which include the National Achievement Survey conducted by the National Council for Educational Research and Training (NCERT) and State Learning Assessment Surveys conducted by selected states. According to a recent amendment to the RTE Act, announced in February 2017, it is now part of the law for all states except Jammu and Kashmir to prepare 'class-wise, subject-wise learning outcomes for all elementary classes' and also to devise 'guidelines for putting into practice continuous and comprehensive evaluation, to achieve the defined learning outcomes' (Ministry of Human Resource Development, 2017). NCERT has already prepared a document indicating learning outcomes for every class and subject at the elementary education level and shared it with all states in 2017. Based on this document every state is expected to draft learning outcomes in this academic year. However, this is a relatively new amendment and it remains to be seen to what extent the states are held accountable if they are not able to achieve the stated outcomes.

In the current system of government schooling, the teachers are not directly held accountable for poor learning outcomes. However, learning outcomes are often highlighted and appropriate interventions are introduced by the government in the form of pedagogical support, teachers' training, and the appointment of additional teachers to ease the burden. However, it is important to understand that these interventions are introduced by the government based on the assessment of learning level of students by the government itself and not based on pedagogical accountability demanded by other stakeholders such as parents and communities. Similarly, the ASER survey (as discussed in *Chapter 3*) evaluates pedagogical accountability from the perspective of achieving basic fundamental learning levels. The survey findings from ASER have provided valuable inputs to state governments to focus more on learning levels over the years. However, since these are household surveys, schools cannot be directly held accountable based on the findings.

Class environment

4.3 Role of U-DISE in ensuring accountability across different domains

The study reveals that there is a huge gap between potential and actual usage of U-DISE data, specifically school report cards, by different stakeholders in the public education system in order to ensure accountability. The study reveals that the lack of usage of U-DISE data, especially by parents and community members, is mainly due to a lack of awareness about the existence of such data as well as about the legal entitlements of their children. Lack of incentives for data usage and adverse socio-economic conditions also impact such information-based approaches to demand accountability. This issue is further discussed in detail in *Chapter 5*.

Financial accountability

Let us first look at financial accountability linkages between the government and the school managed by government. It is observed that U-DISE data form the basis on which financial requirements of a school are identified and aggregated at different levels such as blocks, districts, and states. On the other hand, for MHRD, U-DISE acts as the key information base for determining funding requirements proposed by states in the form of AWP&Bs.

However, gaps are observed many times between the budget proposed by a state and what eventually gets approved. For instance, of the annual budget for SSA proposed for the financial year 2017/2018, only 65 per cent and 67 per cent were approved for Madhya Pradesh and Rajasthan, respectively. Again, there are delays in the funds released by both central as well as state governments, which results in the underutilization of funds and unspent balances. For instance, until September 2015, while central government released only 41 per cent of its share, the state share released was 22 per cent for the state of Himachal Pradesh. It is important to mention here that since budget requests are based on performance of certain indicators, such as percentage of schools that require a boundary wall or classrooms that require maintenance, sometimes the system itself incentivizes schools to declare low performance. This also raises concerns about data manipulation by schools to show low performance.

The second aspect of financial accountability is between schools and parents or community members. The information on the expenditure of school grants included in U-DISE school report cards can be used as an information base by citizens to hold schools financially

accountable. Interviews conducted with SMC members across the three districts revealed that because of the strict mandate of the need for signatures from both the head teacher and the SMC chairperson (who is a parent), transparency in spending of financial resources is achieved to a large extent. However, since not all SMC members attend the monthly meetings, not all of them are aware of the financial decisions of the school. This results in the absence of a collective voice to raise any concern in this regard. The absence of a legal mandate for grievance redressal of parents at the school level adds to the lack of initiatives taken by parents on such issues being put forward in front of school authorities or the government.

Management accountability

The domain of management accountability can be only partly targeted through the usage of U-DISE. Although U-DISE data have some management indicators such as number of teachers and their qualifications, pupil/teacher ratio, and student/classroom ratio, they do not provide information on teacher absenteeism and learning outcomes of students. Based on our discussions with NIEPA, teacher absenteeism is not captured in U-DISE because most of the time teachers' attendance is self-reported in school registers and therefore it is extremely difficult to validate this indicator. Again, other indicators collected in U-DISE are as on 30 September of a particular year. However, teacher attendance measured on a particular date and the same measured at some other point in the academic year might reflect two completely different scenarios. Thus, most of the indicators in U-DISE are related to provisioning of certain schemes or inputs, and teacher absenteeism in this context has not yet received much focus.

In India's current structure of public education, for most management-related issues, accountability does not lie with school authorities alone. The SSA office and school education department at the district and the state levels are accountable as well. For instance, if parents and the community at large want to demand an adequate number of teachers in a school based on U-DISE data, approaching the school authorities is only the first step. Hiring and recruitment decisions for teachers are taken at the state, district, or the village panchayat level, depending on the state. School heads are more directly accountable in other cases, such as maintaining records for teacher attendance. However, these records are sent forward to the block and above, and the power to take any action regarding teacher absenteeism lies not with the school, but with the school education department in the district or the state.

It is also important to acknowledge the fact that accountability gets muddled sometimes owing to dual accountability structures, specifically in education. On one hand (as with the 73rd and 74th constitutional amendments), education is a function that should rest with the local government. Therefore education standing committees should have been formed. With the implementation of RTE, however, a parallel structure was created wherein SMCs were formed. These SMCs also include a village panchayat member who has to participate in school management and development issues. Consequently, the standing committees in many states are defunct and it is not always clear who is actually accountable for a specific issue related to school education.

Even the accountability of the service provider towards government at different levels is diluted because the government does not use U-DISE data as a base to identify malpractices in school management and therefore there is no penalizing of schools on this basis. U-DISE is primarily looked at as a statistical evidence base for annual financial planning for schools, rather than as an indicator of performance based on which the schools can be made answerable.

Pedagogical accountability

The domain of pedagogical accountability does not seem to be targeted through the usage of U-DISE data. At present, U-DISE does not include indicators that reflect learning levels of students which are comparable across states. Therefore, it cannot be used as an information base to assess learning outcomes and thereby to demand pedagogical accountability. It can potentially shed light on school performance with the help of indicators such as dropout rates, passing percentages, or students receiving more than 60 per cent in school test results.

Accountability in U-DISE data collection process

If we consider the U-DISE data collection process, the internal accountability relationship between schools and the government is not strong enough. Ideally, the first stage of accountability lies with the head teacher of the school, who is responsible for providing correct and up-to-date information by filling the U-DISE DCF in the specified time. The school is accountable towards the Cluster Resource Centre Coordinator (CRCC) and also towards the BRC in certain blocks. The second level of accountability lies with the CRCCs, whose job is to verify the information provided by the schools before submitting it to the block office. At the next level, the coordinator at the BRC is accountable towards the district project office for ensuring that the data are validated, properly entered into the U-DISE software, and aggregated for the entire block before submission. The district project office is accountable towards the state SSA office for verification and collation of U-DISE data from all blocks within it. Finally, the state SSA office is accountable towards NIEPA for final verification and collation of U-DISE data from all districts within the state. However, in this entire chain, there is no formal mechanism through which teachers or officials can be held accountable for submitting incorrect information. Also, there is no formal practice of incentivizing better performers or penalizing poor performers.

4.4 Legal provisions and consequences for not publishing school data

In India, the RTI Act mandates that government bodies publicly disclose any and all information related to the public. The maintenance of transparency of information directly contributes towards the containment of corruption; it holds government bodies and their policy instruments accountable to the public and strengthens democratic practices.

The RTI Act (2005)

The primary objective of the RTI is to build a transparency regime. Transparency is pursued through the legal mandate of making all information held by a public authority available to Indian citizens. Under Section 4 of the RTI, the government has a statutory obligation to proactively disclose information in an accessible and timely manner. If the information sought under the RTI Act is not disclosed, complainants can undertake legal proceedings.

Section 4(b) of the RTI Act allows citizens to uncover details about fund flows, eligibility under various schemes, information about decision-making and decision-making processes, powers and duties of both elected and non-elected officials, rules and regulations under which public officials discharge their duties, details of all information held by the government, and more. Data and information must be freely available, but should actually reach the stakeholders. The act recognizes that data must be displayed at the local level, and should be presented in local languages for them to be accessible to the public at large (see *Box 4*).

Provisions for ensuring smooth functioning of the RTI Act

There is a mechanism set up to ensure that RTI applicants receive the requested information within the stipulated period (a process flow chart of filing an RTI application is presented

Box 4. RTI Act (2005), Section 4

Section 4, subsection 1(a)

'Every public authority shall maintain all its records duly catalogued and indexed in a manner and the form which facilitates the right to information under this Act and ensure that all records that are appropriate to be computerized are, within a reasonable time and subject to availability of resources, computerized and connected through a network all over the country on different systems so that access to such records is facilitated.'

Section 4, subsection 3

'For the purpose of subsection (1), every information shall be disseminated widely and in such form and manner which is easily accessible to the public.'

Section 4, subsection 4

'All materials shall be disseminated taking into consideration the cost effectiveness, local language and the most effective method of communication in that local area and the information should be easily accessible.... Disseminated means making known or communicated the information to the public through notice boards, newspapers, public announcements, media broadcasts, the internet or any other means, including inspection of offices of any public authority.'

Source: Ministry of Law and Justice, 2011.

in *Annex D*). Government officers have been appointed as public information officers (PIOs). Supported by assistant public information officers, they are the nodal authorities for providing the requested information to citizens. Similarly, states have appointed state information officers. To monitor the way information requests are handled, the Central Information Commission (CIC) was set up to monitor PIOs and appeals. A First Appellate Authority has been set up under the act, and its role is to undertake independent assessments of appeals.

RTE and disclosure of information

The 86th amendment to the Indian Constitution has made elementary education a fundamental right of every child in the age group of 6–14 years. Based on this amendment the RTE Act was passed in Parliament in August 2009 and came into effect on 1 April 2010. While the RTI covers all government departments, schemes, and programmes, including the education sector, the RTE 2011 framework also spells out the need for proactive disclosure of information when it comes to education-related schemes at the primary level. The SSA aims for complete transparency in all works, particularly for infrastructure development. SSA documents mention that technical design, financial approvals, received and spent amounts, muster rolls, measurement books, books of accounts, and more shall be available for perusal with copies in accordance with the provisions of the RTI Act. In fact, proactive disclosure of this information in the meetings of the SMC and the entire gram sabha has been encouraged under SSA. There are no legal measures elaborating on the disclosure of U-DISE data. However, failure to disclose information is still punishable under the RTI Act.

Usefulness and limits of the RTI Act

The RTI Act is extremely useful in extracting public information, and often becomes a means of getting actual work done. Disclosing the information itself is mandatory by law, and legal action can be taken if the information is not disclosed in the time specified by the norms in the RTI Act. However, it does not have any sanctioning mechanism (except for minor penalties on errant officers). Thus, the accountability loop remains open. According to the 2015/2016 annual report of the CIC, the MHRD received a total of 65,869 RTI appeals,

out of which 809 were rejected. It is not possible to further delineate the number of complaints that were specific to U-DISE.

While the RTE has recognized the importance of grievance redressal and mandates the National Commission for the Protection of Child Rights and the state commissions to act as regulators, it does not spell out how exactly this will be implemented in practice. Under the new amendment in 2015, a proper grievance redressal mechanism has been laid out for the teachers, but parents and communities are not yet covered. As stated earlier, for the general public, there is still no mechanism to ensure that those grievances are addressed.

4.5 Analysis of the established consequences after school data are published

U-DISE data have been used by education administrators and policy-makers at different levels of the public education system in India; that is, school, block, district, state, and centre, primarily for preparing annual education budgets and allocating financial resources from the centre to schools. It is also used by planners and policy-makers for deciding what heads can spend on, prioritizing needs for schools, and identifying beneficiaries for certain schemes, among other things. Schools that perform poorly may be provided with the resources they need (teacher training, new teachers, infrastructure, etc.) to bridge the gap. Until now, U-DISE has been mostly considered by the government as a tool for education planning and budgeting, and not as a medium that could be used to identify malpractices in public schools such as corruption in fund usage. Even though U-DISE data have the potential to indicate certain issues, such as inadequate spending of SSA grants, delay in creation of infrastructure facilities even after receipt of funds, biases in enrolment based on gender and caste, and low pass percentage, there are no legal mechanisms in place for holding the school accountable.

The U-DISE data are made public through its online portal. However, under the RTI Act, if the data have to be disclosed to the public in a timely and accessible way, they must be presented in local languages and disseminated for all, including those without internet access. This can be accomplished by putting up relevant circulars and other information on public noticeboards, such as at the school or at the panchayat offices. The disclosure of any information, including U-DISE, and its legality is under the ambit of the RTI Act. However, there are no established sanctions that have been passed in case of misuse of resources, absenteeism of staff, and other issues. As mentioned before, stakeholders such as parents can complain to teachers or the head teacher, but no formal action can be taken by the head teacher in a case like this. Head teachers at best pass on the complaint and action can only be taken at the block, district, or state level. Thus a parent can only make complaints, and there is no established mechanism to ensure that there is some follow-through. While accountability has been mentioned in the RTE Act, there are no legal provisions to ensure that complaints are dealt with.

The stakeholder interviews conducted as part of this study and the related literature review did not reveal any instances when parents or the community directly used school report cards published by U-DISE as an information base to demand any type of accountability from either school authorities or government functionaries. However, academics, researchers, and non-governmental organizations have used U-DISE data often in India. NIEPA has also been promoting usage of U-DISE data by researchers, and it provides grants for the use of these data for academic research. Therefore, even though no direct community action has been taken, there have been indirect efforts in terms of research studies using U-DISE data to place accountability claims on the government. These are sporadic at best and were not visible in the areas where this study conducted its fieldwork.

Summary

India's public education system seeks to ensure accountability through the public-participation model. The RTE Act mandates that every government-run school in the country should form an SMC with at least three-fourths of its membership made up of parents or guardians. One of the key responsibilities of an SMC is to regularly monitor the functioning of the schools and take collective decisions with respect to any issue related to the school. Using U-DISE data, public accountability is sought through two mechanisms: disseminating U-DISE school report cards for public access and making U-DISE data the foundation for school-level decision-making by the SMC. However, for any accountability route to function efficiently, there are a few essential components that have to coexist and in the context of India, many of these essential conditions are actually missing in practice. The study observes some of the roadblocks in achieving a closed accountability loop, such as a lack of access to data, a lack of knowledge about rights and entitlements, a lack of collective voice and action, limited provision for enforceability, and the absence of a formal grievance redressal mechanism for parents.

Potentially, U-DISE data could be used to target three key domains of accountability: financial, management, and pedagogical. U-DISE data form the basis on which financial requirements of a school are identified and aggregated by the government at block, district, and state levels. On the other hand, for MHRD, U-DISE acts as the key information base for verifying funding requirements proposed by states and fulfilling their financial needs. However, in practice, there are gaps between funds approved and those proposed, as well as delays in the release of funds leading to underutilization. Since U-DISE does not collect data on teacher absenteeism, the domain of management accountability can only be targeted partly through indicators such as number of teachers and their qualifications, pupil/teacher ratio, and student/classroom ratio. At present, U-DISE does not include indicators that reflect learning levels of students and therefore it cannot be used as an information base to demand pedagogical accountability. However, it can potentially shed light on school performance with the help of indicators such as dropout rates, passing percentages, or students receiving more than 60 per cent in the school test results.

5. Analysis of stakeholders' perspective on the usefulness of U-DISE

When citizens can identify the gap between what they are supposed to receive as part of any public service delivery and what they are actually receiving, they are in a better position to ask questions, and thereby make accountability claims. Information is a necessary precondition for ensuring accountability in a public education system. In this context, the Unified District Information System for Education (U-DISE) plays a crucial role in collecting annual information about every school in India and making it available for public access.

5.1 Relevance and usefulness of U-DISE school report cards

5.1.1 Perception of parents

Unfelt need for usage of data for making school choices

A fundamental issue that emerged from our field interactions is that many parents do not understand the need for, or relevance of, using school-specific data. This is mostly because they are not aware of the existence of any such data. In order to select a school for their child, information is usually sought through informal means such as word of mouth and through interaction with community leaders and experienced teachers. As a result, parents have not felt the need to access any other source of school data. It is observed that most parents currently make school-specific choices on factors other than data collected by U-DISE and therefore, in the present circumstances, U-DISE does not seem to be relevant for them. However, a majority of the parents (77 per cent) felt that it is important to publish school-level information in general for public access so that they know more about the schools and are in a position to put forward their concerns to the authorities.

Currently, India's education scenario is such that it is mostly low-income families who cannot afford to send their children to private schools who end up sending their children to government schools. A majority of these parents are generally small farmers, self-employed individuals, agriculture labourers, or daily wage earners, with very low levels of literacy (see *Table 7*). Since most parents belong to lower middle-class or poor backgrounds, the proximity to the school from their house and the lack of financial burden are the primary determinants of school choices for their wards (see *Figure 17*).

Information that parents perceive to be useful

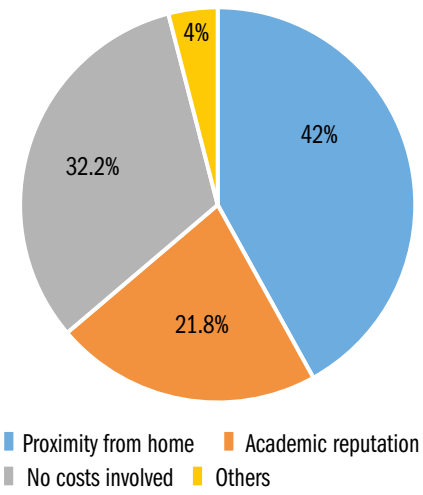
More than 90 per cent of the parents covered in the survey mentioned that they have never seen a U-DISE school report card. Thus, they could not answer questions on the usefulness of the specific indicators included in U-DISE. In order to understand their perspective, a list of indicators reflecting different aspects of a school, similar to the ones covered in U-DISE, were presented to parents and they were asked about the usefulness of such information with respect to the school their child was attending. This is presented in *Figure 18*. Each bar shows the percentage distribution of parents who thought that information about a particular indicator was very useful, quite useful, or not useful. Some of the information that most parents (more than 80 per cent) perceived to be extremely useful to know are: number of teachers in school, teacher attendance, infrastructure facilities, test scores of students, safety in schools, among others.

Table 7. Socio-economic characteristics of parents covered in the survey

	% distribution of parents
Highest education level	
No schooling	21.7
Primary	18.9
Upper primary	28
Secondary	18.3
Higher secondary	7.4
Graduate and above	5.7
All parents	100
Principal occupation	
Self-employed in agriculture	15.4
Self-employed in non-agriculture	6.9
Regular salaried/wages	7.4
Casual labour	37.1
Homemaker	29.7
Others	3.4
All parents	100

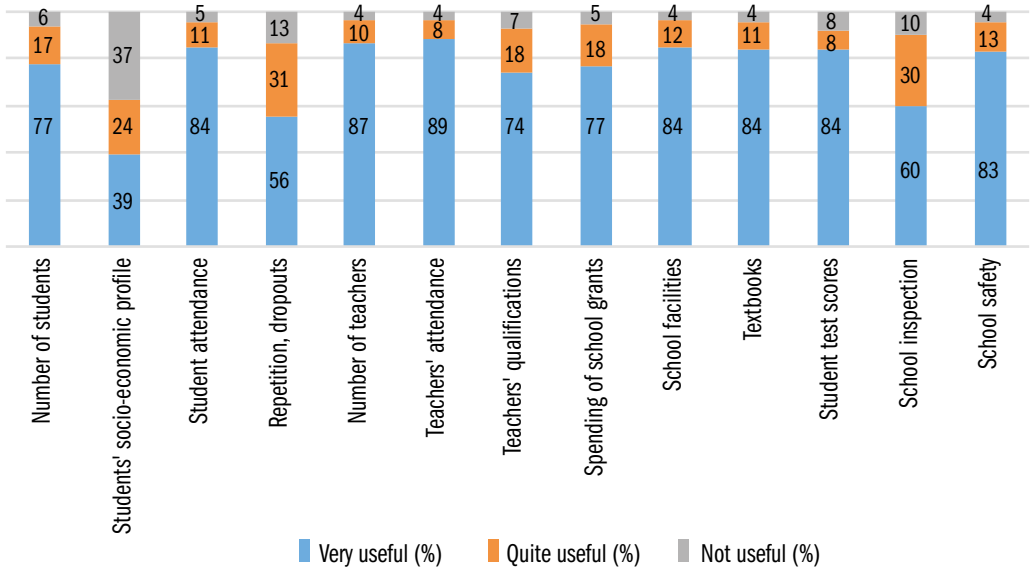
Source: Authors' estimates based on a primary field survey of 176 parents in 3 Indian districts, Accountability Initiative, May and June 2017.

Figure 17. Percentage distribution of parents across most important reasons for sending children to government schools



Source: Authors' estimates based on a primary field survey of 176 parents in 3 Indian districts, Accountability Initiative, May and June 2017.

Figure 18. Parents' perception on the usefulness of school indicators



Source: Authors' estimates based on a primary field survey of 176 parents in 3 Indian districts, Accountability Initiative, May and June 2017.

How can information be used?

An important pitfall in the pathway to accountability is how parents can use this information to make accountability claims. In the absence of mediation, most parents interviewed were not able to articulate the specific purposes for which U-DISE information could be used vis-à-vis improving school performance. 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 potential usage of information for demanding accountability from schools. More importantly, many of them were not aware of the relevant legislation in place such as the Right to Education (RTE) Act or the Right to Information (RTI) Act.

Broad information needs of parents

As part of the survey, all parents who reported that they had not heard about U-DISE were asked to mention what they would ideally like to know about their children's schools, and the responses varied widely. Respondents were most keenly interested in knowing the following indicators:

- quality of learning, students' performance in examinations, student attendance;
- whether the school has good provisions for children's safety, including secure boundary walls;
- freshness of midday meals, adequacy of toilets, cleanliness and hygiene, clean drinking water;
- teacher attendance, qualifications, number of teachers, quality of teaching.

One of most important aspects that most of the parents (80 per cent) were keen to have information about was the learning level of their children. Unfortunately, such an indicator is currently not included in U-DISE. At present, there is no regular feedback mechanism for parents to know how their children are performing in the classroom, and information on academic performance is only given at the end of the year with respect to the child's grade. Most parents felt that they would regularly like to know whether the children have learned what they are supposed to learn with respect to their grade.

Perception of government school teachers

As part of the survey, the head teachers were asked if they were aware of the purposes for which U-DISE data are further used by government once the data are submitted by the schools. All the sampled head teachers (100 per cent) were of the opinion that once they fill in the U-DISE Data Capture Format and submit it to the block offices, the data are eventually used by government to determine the funds required by the schools under different heads of Sarva Shiksha Abhiyan (SSA) and also for creating required infrastructure facilities as laid out by the RTE Act.

Almost all the head teachers (20 out of 22 head teachers surveyed) across all three districts were of the opinion that the U-DISE data or the school report cards can be used for strengthening accountability in public education in India. However, there are challenges that need to be resolved before this becomes a reality. Some of these include a lack of awareness among the parents and the community members regarding availability of school data, difficulties faced in accessing such data, lack of knowledge regarding how to use these data, and the absence of a formal grievance redressal mechanism for the public.

Perception of government officials and administrators

The SSA officials who were interviewed at the centre, state, district, and block levels were largely of the opinion that while U-DISE data have the potential to be used by the general public as a tool to demand accountability from the service providers, it might take some more time before this becomes a reality. The first and foremost step in this process is awareness generation about the existence of such data and their usability. Arun C. Mehta, Professor and former head of NIEPA's Department of Educational Management Information System (EMIS), elaborated:

> Present U-DISE data is mostly used by government for annual financial planning for education in India. Parents and communities are hardly making use of this data. Of course it is being used by research organizations, NGOs and media working in the education sector either to look at trends in the educational indicators or to locate schools. However, instances where this data is being used by the general public to demand accountability from public education providers are extremely rare. (A. Mehta, personal communication)

Although U-DISE school report cards could play a major role in improving transparency and accountability in public education delivery, because of loopholes in information flows from state to the blocks many block offices are not aware of the use of school report cards as a tool for increasing transparency and accountability and therefore have not focused on disseminating information to parents or communities. Similarly, Mr P.S. Rai, Block Resource Centre Coordinator, Beena block, Sagar district, Madhya Pradesh, said:

> Parents usually don't have any information about DISE, and we have not been given any notice from the authorities about informing parents. If parents come to school and ask about their children then it will be a big deal, but most parents don't visit the school. If parents get to learn about DISE data then it will be a good thing for us because that will lead to improved transparency and accountability at the school level. (P.S. Rai, personal communication)

5.2 Stakeholders' perspectives on accessibility of the information shared with the public

Awareness and accessibility go hand in hand for any new information system. Awareness levels about the existence of U-DISE data are extremely low among parents. Of all parents surveyed in the three districts, a significantly high proportion (91 per cent) revealed that they had never heard of school report cards available through U-DISE. There were differences in awareness levels between parents who chaired the SMCs versus those who were general members of the SMCs. Eighty-five per cent of parents who chaired the SMCs across 22 schools had heard about U-DISE. In contrast, other parents who were general SMC members were not aware. This sentiment was reflected by nearly all

other stakeholders interviewed as part of this study (including head teachers, community leaders, government officials, heads of civil society organizations [CSOs], and media representatives).

Most stakeholders were of the opinion that most parents and community members whose children attended government-run schools were not aware of U-DISE data. Such lack of awareness could be for different reasons including: a lack of training/awareness-generation activities to educate the public about the availability and ways to access school-level data; schools not making these data available to the public; U-DISE making these data available only through an online portal, which restricts access to places without computer or internet connectivity; and non-availability of school report cards in local languages in a user-friendly format. Interestingly, it is important to note that around 35 per cent of parents were aware that schools annually submit data related to various aspects of the school to the government. However, they were unaware that the collated data were available as U-DISE school report cards.

On the other hand, all teachers and head teachers across all 22 schools were aware of U-DISE data. However, this is due to the fact that they are involved in the annual U-DISE data filling process. But, here too awareness on published school report cards was limited. Ninety per cent of teachers and head teachers did not know that school report cards for each and every school in India are accessible online through the U-DISE portal. Of the stakeholders interviewed it was only people involved with online media and CSOs such as Pratham and ASER Centre who were well aware of U-DISE data and ways of accessing them online.

5.2.1 Ease of comprehension of data in U-DISE school report cards

Given the limited awareness on the presence of school report cards, more than 90 per cent of parents surveyed could not comment on the ease of comprehension of school data in the way they are currently presented in the U-DISE school report cards. Of the few teachers and head teachers who knew about the report cards, most were of the opinion that school report cards in their current format are not easy for parents and the general public to comprehend in order to understand school functioning or enable school choice. This was particularly problematic as parents of children attending government schools tend to have very low levels of literacy, so putting out a range of indicators in numbers and percentages would not be the best way of representing the data.

Data sharing with public and community

U-DISE has made significant efforts to share the school data with the general public, mostly through its online portal. It has created a mobile-based application to access school report cards and has a toll-free number, and the school report cards are available in a few other Indian languages. However, U-DISE data are still not reaching people, as the website is in English and not enough publicity is generated at the community level. There is still a considerable proportion of parents in rural areas who are either illiterate or semi-literate and cannot comprehend information written in English. A majority of the rural households in India still do not have internet or computer access. Even though a large section of the population do use internet on their mobile phones, internet penetration in rural areas is only 17 per cent, compared with 60 per cent in urban areas. Even among the internet users, owing to lack of awareness and the unfelt need for accessing U-DISE data a majority of surveyed parents (98 per cent) do not access the online U-DISE portal to look at school-level data.

Even though every school is expected to put up the school report card on its noticeboard for public access, it was observed that this practice is not strictly followed in all the three districts surveyed. Several respondents (parents and community leaders) suggested that

information about the school could be shared during SMC meetings so that a wider base of parents is aware about this. Thus, simple ways to make school information available to the parents and community leaders, which could then be potentially used as a first step in starting any dialogue on school accountability, have not been implemented.

Community gathering

5.3 Stakeholders' perspectives on the short-term and long-term impact of U-DISE data

U-DISE is one of the largest data collection processes within the education establishment in the country. The impact of U-DISE data needs to be considered against the stated goals at the time of its conceptualization and design. The key objective of creating such a database was to use it as a statistical base by the government at both national and subnational levels to create Annual Work Plans and Budgets (AWP&Bs) for elementary education in India under SSA. Secondly, U-DISE data are public information, and as a mandate of the RTI Act, the government has to share them with the general public. The data can potentially be accessed by all other stakeholders, and eventually they can be used to ensure accountability and transparency from the public education administration.

Based on the interviews conducted with government officials in the education ministry at the national level and SSA officials and the subnational level, it is evident that U-DISE is treated as an integral part of the SSA financial planning process and whatever funds a state requires for management of U-DISE are provided by SSA.

However, as far as the second goal of U-DISE regarding accountability in public education is concerned, we have observed minimal impact to date. Owing to a large number of challenges including a lack of awareness, accessibility issues, and a lack of publicity, parents and community members rarely use these data to start any dialogue with school authorities. In this context, it is important to highlight that on several occasions parents also hesitated to initiate such conversations with schools or any government authority because of the absence of a formal grievance redressal mechanism in place to make their voices heard.

U-DISE has its own limitations as well. It is an annual one-time exercise, collected on a particular date, and thus does not always meet the school or administrative need of real-time access to school data. As a result, many states in India have their parallel systems

Box 5. Quotes from field interviews with education administrators

'Once a state submits its annual work plan for elementary education to MHRD, the SSA technical support group looks at the U-DISE data for that particular state and verifies the rationale behind demands under each component.'

Mr Girish Hosur, Director, SSA, Ministry of Human Resource Development (MHRD)

'All the activities under SSA under which per-student or per-teacher grants are proposed are on the basis of DISE data. Again, all infrastructure requirement as part of RTE is also on the basis of DISE data.'

Mr Santosh Kaushal, management information system head, SSA, Himachal Pradesh

'U-DISE has been the basis for preparation of annual work plan and budgets (AWP&Bs) by every state to avail funds from the central government (MHRD) for government elementary schools under SSA. All the calculations involved in the preparation of annual budgets are strictly based on U-DISE data. As a result, U-DISE is treated as an integral part of the SSA planning process.'

Professor Arun C. Mehta, Professor and former head, Department of EMIS, NIEPA

As said to Accountability Initiative, Centre for Policy Research, during interviews in person.

of school-level data collection on various aspects of schools along with student-level information. For instance, Rajasthan introduced an online portal called Shala Darshan[16] in 2015 that has detailed information about each government elementary school in the state. It aims to provide the state policy-makers and planners with a database which is updated in real time to assess the status of education with respect to all possible information about a school such as basic infrastructure facilities, teacher-specific indicators, and student-specific indicators. While the parameters recorded at Shala Darshan are similar to those in U-DISE, it is much more exhaustive and updated at least three to four times a year. Such parallel processes raise questions about the overlapping of data collection, and time taken by teachers in filling numerous formats. For most of the state-level education planning, the state government refers to the data uploaded at the Shala Darshan portal mostly because it is updated more regularly and provides the latest data available at any point in time.

As part of stakeholder interviews, the SSA officials at centre, state, and district levels were asked if they could share some instances when publication of school data proved useful to detect malpractices such as fund leakage or teacher management. However, we have not come across examples of sanctions being enacted for unscrupulous activities uncovered through analysis of U-DISE data. Similarly, there is no evidence of any policy being adopted to deter corrupt behaviour in the education sector directly based on U-DISE data. The creation of such a huge information base about every school in India itself definitely adds to transparency and accountability measures followed by the government. However, raising awareness among the general public and enabling public data use remain a challenge.

16. Web link: http://rajssa.nic.in/School/School_Home.aspx

6. Conditions of success, limits, and strategies for improvement of U-DISE

6.1 Stakeholders' perspectives on the conditions of success

Based on our discussions with the architect and former head of the educational management information system (EMIS) at the Unified District Information System for Education (U-DISE), National University for Educational Planning and Administration (NIEPA), Mr Arun C. Mehta, NIEPA's key role is to create a robust annual school-level database and eventually put together a mechanism to dynamically track each and every child enrolled in any school in India, which has been targeted through the recently introduced U-DISE Student Database Management System. Designing U-DISE software for data aggregation and creation of different reports including U-DISE school report cards, and final validation of U-DISE data are considered to be NIEPA's core responsibilities. He believes that NIEPA has been successful in its effort in creating the single largest school-level database in India that gets updated annually. However, for these data to be used by other stakeholders such as parents and community members, much more effort needs to be put in. Professor Mehta said:

> We disseminate the U-DISE data by putting it online on the U-DISE portal in a variety of forms including school report cards and raw data in the MS Excel format. However, a greater effort is required from government's side to make the general public aware about U-DISE school report cards. If parents are equipped with such a database they can hold schools responsible for any kind of corrupt or irresponsible behaviour. The EMIS division of NIEPA is not in a position to take on the responsibility of undertaking ground-level initiatives to make other stakeholders such as parents and communities aware about existence of this database and ways in which these data can be used.

Since U-DISE is used extensively by the government at every level for creating annual financial budgets for Sarva Shiksha Abhiyan (SSA), one of the original objectives – to create an electronic management information system of school-level data to create financial plans for education – has been successfully achieved. However, a greater effort is required from the government to make the general public aware about U-DISE school report cards. A majority of parents being surveyed as part of this study were not aware of the availability of such an in-depth school-level database. Therefore, in the present context, the use of U-DISE school report cards for ensuring accountability in public education seems to be a far-fetched expectation to have from parents.

Why are parents not aware of U-DISE?

During the survey, all head teachers responded that they have neither attempted to organize any awareness activity regarding public usage of U-DISE data in their locality, nor attended any such event. Similarly, there has been no mandate from the government to schools for organizing training for parents. Without any such training or awareness-building activity, it is difficult to advocate for the importance of school report cards. Therefore, based on interviews with the different stakeholders, three key conditions for the success of U-DISE data emerge.

Awareness generation about the existence of U-DISE data and potential usage

It was clear from our field visits across schools and households that there has been no initiative on the ground from either the government or any civil society organization (CSO) to raise public awareness about U-DISE data. Both teachers and parents feel that one of the key conditions for the success of U-DISE data in improving accountability in education delivery and transparency in usage of resources is to raise awareness about its existence

Figure 19. Stakeholders' perspectives on ways to improve awareness about U-DISE data

Head teachers	• A final version of the school report card should be sent to the school from the block office and schools should get a formal notification of this. Schools would then put up the report cards on the school noticeboard for public view. • There should be an external person from the government side who can provide training on U-DISE data to parents and community members at least twice a year during annual gatherings of all parents in the school.
Teachers	• The U-DISE school report card can be sent to the parents once a year through the students along with their grade-specific performance report. • Awareness can be generated about U-DISE data through entertainment activities such as musical shows, dance enactments, plays, etc. • Therefore, along with U-DISE data, people should be made aware of the rights and entitlements of children in schools, and laws such as Right to Education (RTE) and Right to Information (RTI).
Parents	• Parents should be informed about the U-DISE data during school visits for parent-teacher meetings or school management committee (SMC) meetings, or collecting the annual result. • Guidance also should be given on how to read and understand the information and how it will benefit the children. • There should be advertisements in localities through banners and hoardings in local languages.
Community leaders	• There should be advertisements about the availability of U-DISE data and their potential usage through radio and television. The government should also advertise in newspapers published in local languages. • Public platforms such as village panchayat meetings, gram sabhas, etc. could be good mediums to educate parents and the community about U-DISE data.
Government administrators	• School report cards should be enlarged in size and put up for public view on school noticeboards. • All U-DISE data are already available online on the U-DISE portal. They can be better advertised through various types of media.

among parents and communities. More importantly, a large section of parents, especially in rural India, would require 'hand-holding' and guidance on how to use this information to demand better accountability from school authorities. Different stakeholders have suggested a variety of ways to achieve this objective as presented in *Figure 19*.

In-depth training on U-DISE and its potential usage to SMC members

In India's context, solely creating awareness about U-DISE data among parents is a necessary but not a sufficient condition for making the public education system more accountable. Parents do care for their children's education. However, it is evident from the survey that most parents of children going to government schools have no idea about how such information can be used, because of low levels of literacy among them. Parents should also be trained and taught how these data can be used and how they could benefit their children. For instance, if a parent wants to take some action based on the data, they should know how to approach a school and what further steps they can take in their capacity as a parent.

One way of implementing this could be through training of SMC members about U-DISE. SMC members should be provided instruction on the importance of school-level data during SMC trainings that are conducted once a year or once every two years. Other

aspects, such as how information can be used, should also be discussed in monthly SMC meetings. Often, in rural areas, not all parents have the resources, time, and understanding for using online data. However, if a group of selected parents who are SMC members can be trained, they can represent all parents and take the concerns and demands of parents forward to the school authorities, and higher if needed.

Ensuring the effectiveness of U-DISE school report cards

Parallel to awareness-generation activities, there could be ways to make the U-DISE school report cards more effective in the following manner:

Modes of accessing U-DISE data: A majority of parents and school teachers, especially in the rural areas, were not aware of the online U-DISE portal, or the more recently introduced mobile phone application for viewing school report cards. A large proportion of rural households in India still do not have internet access, though a considerable section of the population do use internet on their mobile phones. Therefore, it is suggested by many stakeholders that there should be other ways of accessing U-DISE data, such as printed copies of the school report cards in a variety of Indian languages.

Adherence to RTI legislation by the schools: Based on our discussions with NIEPA, schools are supposed to receive a final copy of the U-DISE school report card from the block office once the data are checked, verified, and finalized from the central office at NIEPA. This is to make it available to stakeholders at the school level. However, except for one or two schools in the district of Solan, none of the sampled schools actually received it. Even when we spoke to teachers, none of them were aware that they are supposed to receive a copy. Under Section 4 of the RTI, the government has a statutory obligation to proactively disclose information in an accessible manner. Accessibility in this context implies that data and information must not only be freely available, but should actually reach the stakeholders. Like so many other activities under U-DISE, block-level officers can make it compulsory for the schools to put up school report cards on their noticeboard and ensure that there is no shirking of responsibility.

Comprehensibility and presentation of data: Most of the teachers who have seen U-DISE school report cards felt that the way the information is currently presented might not be easy to comprehend for semi-literate parents. Moreover, school report cards have a host of information, not all of which may be relevant to all stakeholders. Simpler versions including with data charts and visualizations could be created to make it more user-friendly and accessible to a largely illiterate population.

Establishing a formal bottom-up grievance redressal mechanism

One of the crucial requirements for creating an accountable system in the delivery of any public service is the capacity of citizens to have their voices heard through formal complaint mechanisms; based on these, action can be taken eventually. Although the RTE Act recognizes this, it does not lay out a clear mechanism for parents to put forward their concerns, starting from the school level to the education administration across the hierarchy. In order to ask for accountability from the public education authority, parents should have access to a simple and approachable grievance redressal system. Anjali Bharadwaj, Co-convener, National Campaign for People's Right to Information, pointed out:

> What needs to go along with the RTI Act is a grievance redress mechanism. At the moment, while lapses can be found, people often go unpunished. A lot of the times, teachers may not be responsible for poor quality services: They may not have been provided with enough funds, facilities, or training. There is an entire body within government offices dedicated to ensuring that the work is actually completed in a timely manner; however, they are not held accountable. The minute we start holding these 'supervisors' accountable, they too will take greater care in ensuring that teachers, head teachers, etc. do their jobs properly.

6.2 Stakeholders' perspectives on the limits and risks

Based on face-to-face interviews with a variety of stakeholders, some of the limitations of the U-DISE database are highlighted below:

A lack of information on learning outcomes: One of the limits of U-DISE data, highlighted mainly by teachers and the heads of CSOs, was that they do not provide information on the learning levels of students. In a public education system, one of the most important indicators to measure accountability is the learning level of students. For parents as well, learning levels of their children according to their grade is the most crucial piece of information they would like to have. In the absence of such information about the school, the accountability dialogue is limited.

Enrolment across social groups or caste should not be published: According to some head teachers and teachers, publishing data on social group or caste of the students, as is done in U-DISE to date, 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.

U-DISE does not allow for prioritizing infrastructure requirement: Over time, U-DISE has replaced school development plans as the main source of information for planning and budgeting. The U-DISE format, however, as it is currently envisaged, does not allow schools to take into account school priorities or school needs. Instead it is much more of a status check on the current infrastructure and human resources available in the school and corresponding shortfalls. Thus, if a school is missing a number of different infrastructure facilities, the present U-DISE Data Capture Format (DCF) does not provide the school with the option to prioritize its requirements, given that government funds are limited. For instance, a school next to a highway which may not have a toilet or may need an additional classroom may still feel that a boundary wall is the most critical requirement.

Highlighting the quality or usability of infrastructure facility is not possible: Currently, in the U-DISE DCF, a school can only report if a certain infrastructure facility is available or not (yes or no). However, on several occasions, it so happens that although the facility is available at the school, it might not be in usable condition and there is no way to highlight this information. For instance, if there is a girls' toilet in the school without any running water, then there is no provision for explaining this problem in the U-DISE DCF, as it exists at present.

7. Conclusions and recommendations

It is a widely acknowledged truth that *reliable, relevant, and regular* data are the bedrock of an accountable education system. The Indian public education system has long recognized this fact and through the Unified District Information System for Education (U-DISE), it has taken important steps towards building a data platform for elementary and secondary education. In recent years, efforts have been under way to supplement U-DISE data with data on learning outcomes. This is a reflection of a larger policy shift aimed at making improvements in learning outcomes the key policy goal. To this end, efforts are now under way to initiate a district-level learning outcomes survey or the National Achievement Survey (NAS) and a student-level tracking system called the U-DISE Student Database Management Information System.

In addition, subnational governments have launched their own data systems which store data on student entitlements and other school-level input and output indicators. Taken together, it can be argued that the Indian public education system is data-rich – with the caveat that the bulk of data being collected are focused on school inputs rather than student learning. The challenge, however, lies in how these data are being used. From the governments' perspective, these databases have largely been built to facilitate greater management and internal decision-making within the government system. Consequently, databases are rarely used as an accountability tool even within government.

As we have discussed, the new district-level NAS is an outlier. This is because the push to measure learning outcomes more regularly has emerged in response to a broader shift in the public discourse on the government's role in education away from the provision of school-related inputs to improving the quality of learning. Measuring learning on a regular basis is the first step towards achieving this shift. However, even in the case of NAS, the government's emphasis and primary goal is to draw on these data for internal decision-making rather than improving accountability relations between citizens and government.

Against this background, this study has highlighted the limited extent to which this data-rich education system has in fact effectively contributed to strengthening transparency and accountability in India. For the moment, the government has limited its 'transparency' and 'accountability' function to placing data collected on a few critical indicators in the public domain. Raw data are available for U-DISE, on request. However, little has been done by way of raising citizen awareness; sharing information directly at the school level in a manner that is accessible, relevant, and useful to school-level stakeholders; and building a grievance redressal mechanism to close the accountability loop. Crucially, the internal accountability mechanism within government is delinked from the data collection exercise. Officials are not penalized for data errors or inaccuracies. Nor are data collected used as an indicator of performance.

Moreover, even though U-DISE data can indicate potential malpractices in schools, there is no formal mechanism in place for holding the teachers accountable for schools' performance. The only accountability relationship that exists currently is financial. U-DISE is the key data source based on which the blocks, the districts, and eventually the states prepare their annual education budget proposals. The central government also validates and eventually approves the financial proposals after verifying them with respect to U-DISE data collected by the state. As we have mentioned, budget requests (and subsequent allocations) are partially dependent on performance on outputs linked to U-DISE data. But here too the system is at times incentivized to declare low performance (as money is linked to output gaps), leading to data inaccuracies.

7.1 Strengthening the internal accountability relationship

To close the loop and ensure that the vast range of data collected by government achieves its accountability potential, we believe the following key conditions need to be met.

Strengthening the link between performance and the intergovernmental fiscal transfer system: As we have mentioned, the current planning and budgeting system for education financing is closely linked to U-DISE data. Under the Sarva Shiksha Abhiyan (SSA), states present their annual work plans linked to output and infrastructure goals arrived at using U-DISE data. Final budgets are linked to these goals. However, there is no mechanism of direct financial accountability if goals stated for one year are not met. Accountability, to the extent it is sought, is linked to expenditure rather than achievement of targeted goals. To address this gap, it is important to restructure the fiscal transfer system in a manner that links budget allocations and expenditure management to performance on key indicators. However, to ensure that the system incentivizes accountability for outcomes, care will have to be given to design the fiscal transfer system such that it is linked to the right indicators. The recent commitment by the Government of India to undertake an annual NAS offers an opportunity to do just this. Through NAS, the SSA could restructure its planning and budgeting system to create a budget window that links some proportion of funding to state government to performance on learning outcomes. This would ensure a direct accountability relationship between data collected on learning outcomes and performance against these outcomes.

Building interoperable, real-time databases to enable ease of decision-making: As highlighted in this report, data on education are collected by a number of different departments, across different levels of jurisdiction. In the current architecture, these different databases function in silos, independent of one another. This creates a number of problems including intergovernmental coordination, overloading data collectors at the front line, and in data quality. Crucially, the presence of multiple databases serves to obfuscate accountability. Breaking the current data silos and ensuring interoperability across databases is critical. This will serve to strengthen the quality of data, ensure data validation and comparability, and avoid duplication, and in the process create conditions for affixing accountability at the right level of government.

Using technology to enable real-time databases: As argued in this report, in the current architecture data collection and entry into the database do not take place in real time. There is a time lag of two to three months between the time that data are collected and actually utilized by government for planning purposes. This time lag is much greater for making the data public to citizens (we deal with this issue in the next section). One important consequence of this time lag is that it limits the monitoring potential of the education databases. Given the time delay, data cannot be used by education officials to monitor the everyday activities in schools. This is one reason data on teacher and student attendance are also not collected. Using technology to build real-time databases is an important precondition for education databases to strengthen transparency and accountability.

7.2 Strengthening accountability to citizens

Strengthening online and offline mechanisms for sharing data with the public, particularly at the school level: As highlighted throughout this paper, a critical weakness in the current data regime for education is the limited efforts that have been made to provide data to the public. The government has limited itself to sharing data across key indicators online. However, there are no clear protocols on determine the mechanism for sharing. This includes protocols on timing (U-DISE school report cards reach the public domain one year after data have been collected), sharing format (raw data have an even longer time lag and most other data are provided in PDF documents that are not machine

readable), and levels of disaggregation (U-DISE is the only database that provides school-based data). Putting in appropriate data protocols to ensure that online data are made available in a manner that is useful and relevant to citizens is critical.

At the same time, it is important to recognize that internet-based data sharing is only one means of sharing data with the public. For a country where illiteracy is high and the internet remains inaccessible to a significant proportion of the population, identifying means of providing data to the public that do not rely solely on the internet is critical. Transparency activists in India have drawn on the legal framework of the Right to Information (RTI) Act to advocate for a Janata (People's) Information System (see *Box 6*), which mandates that all relevant information must be made publicly available through display boards and other means at the sites where governments interact with citizens such as local government offices, schools, and health centres. The Right to Education (RTE) Act, too, draws on this framework to mandate that all relevant school information, including U-DISE, be displayed on transparency boards in schools. This mandate, however, has not been enforced. If the transparency and accountability potential of the education data are to be realized, enforcing this provision is critical.

Finally, efforts need to be made to make people aware of the very existence of U-DISE school report cards. These could include advertisements in newspapers, radio, and television in both English and local languages, community-level trainings on how these data can be used, and regular social audits of U-DISE data in SMC meetings. The general public should also be made aware of their rights laid out by the existing relevant laws in place, such as RTE and RTI. Civil society organizations and non-governmental organizations can take a lead on this.

Box 6. Janata Information System

Activists in India, especially those who have fought to bring about the RTI Act, have also advocated for a Janata (People's) Information System. This system mandates that all government information must be made publicly available and easily accessible, even to those without internet access. Under such a system, information would be made available at public offices, local government offices, etc.

Information about Mahatma Gandhi National Rural Employment Guarantee Act, a centrally sponsored employment guarantee scheme in rural India, in Vijaypur panchayat, Rajasthan was released publicly through this system. The information disclosed included all the information pertaining to entitlements, details of job card holders, works sanctioned, input costs, and more. The information was proactively disclosed in a form and format which was relatable to the intended audience, local labourers. The information was displayed on the panchayat walls, which meant that any person at any point in time could access it. Maintenance costs were low, as the information was painted on the panchayat walls, and the same format could be used to update information for a period of five years. The information was updated annually.

Source: Sahgal, 2014.

Strengthening the link between U-DISE data and school-level planning: By design, U-DISE is expected to be used as a tool for planning and decision-making by the education administration. In the current architecture, despite a mandate to make school-level plans, the planning process begins at the district level using U-DISE data. As Accountability Initiative's work on the planning process has repeatedly highlighted, one important reason for the absence of school planning is that the lack of discretionary funds and powers available creates disincentives for the school committee to engage in planning activities, leading to a vicious cycle of low awareness and low usage of critical education data at the cutting edge. To address this gap, the education financing structure has to be restructured in a manner that ensures greater discretion and decision-making authority at

the school committee level. This could be achieved by devolving untied funds to schools accompanied by a capacity-building campaign launched by the government. Such a model has been tried and tested in the southern state of Kerala, in the context of decentralization of funds to local governments where all local governments received a significant untied grant accompanied by a state-led campaign for planning. Known as the People's Plan Campaign (see *Box 7*), this effort received international attention and has been widely recognized as a success. The Kerala experience could serve as a template for creating the conditions to use education data to build school-level planning and encourage citizen monitoring.

Box 7. People's Plan Campaign

The People's Plan Campaign was launched in 1996 in Kerala, India. The aim was to ensure the people's participation in the decentralized planning process, starting from the stage of preparation of plan itself. The government also made a significant decision – to devolve 35-40 per cent of the state plan funds to local-level plans. This was to enable local people to determine and implement their own development priorities, based on their needs.

People's needs were assessed through meetings of the gram sabhas (village meetings). The village panchayat compiled these preferences into a plan, which was coordinated and vetted at the block level and approved at the district level by a district planning committee, which was constituted to assist the panchayats.

Such devolution of funds coupled with decentralization of powers was the first of its kind in India. It was an experiment in decentralization and delegation of powers to local governments with a focus on local planning, and it can provide insight into how decentralization could look in practice.

Source: Isaac Thomas, 2000.

Strengthening grievance redressal mechanisms: It is well recognized that the opportunity costs for citizens to place accountability claims on the state are high. These costs are worth bearing only if there are clear avenues of redress and if citizens have trust in the governments' ability to be responsive to their accountability claims. In the current structure of elementary education administration, grievance redressal mechanisms are weak. As our interviews through this study highlight, citizens are unaware of where and how they can lodge a complaint or seek redress based on their monitoring of school systems. Moreover, there is little administrative follow-up on grievances and almost no internal accountability for managing citizen grievances. At present, there is no clear-cut mechanism or legislation for grievance by the parents, and as a result the whole issue of the public's demanding accountability gets diluted. A solid grievance redressal mechanism will enable and embolden stakeholders to address corruption and to weed out negligence, inefficiency, discrimination, and other ills that plague the system. In the absence of a grievance redressal mechanism, even those with information might be powerless. These are crucial areas that need strengthening.

Annexes

Annex A. List of stakeholders interviewed

Central government officials and regulators, national level
1. Mr Girish Hosur, Sarva Shiksha Abhiyan (SSA) Director, Ministry of Human Resource Development (MHRD) 2. Ms Indrani Bhaduri, Head, National Achievement Survey (NAS), National Council for Educational Research and Training (NCERT)
Government officials in charge of educational management information system and planning, subnational level
3. Mr Satish Kaushal, Management Information System (MIS) Head, SSA State Office, Himachal Pradesh 4. Mr D.R. Chouhan, Planning Head, SSA State Office, Himachal Pradesh 5. Mr Kuldeep Sharma, MIS Head, SSA District Project Office, Jaipur, Rajasthan 6. Mr Kamlesh Chadar, MIS Programmer, SSA District Project Office, Sagar district 7. Mr P.S. Rai, Block Resource Centre Coordinator, SSA, Beena block, Sagar district, Madhya Pradesh
Official in charge of U-DISE
8. Prof. Arun C. Mehta, Professor and ex-head, Department of EMIS, National University of Educational Planning and Administration
Civil society representatives
9. Dr Wilima Wadhwa, Director of ASER Centre, India 10. Mr Ram Kishan, Annual State of Education Report (ASER) survey, State Coordinator, Rajasthan 11. Mr Mahendra Yadav, ASER survey, State Coordinator, Madhya Pradesh 12. Anjali Bharadwaj, Co-convenor of the National Campaign for People's Right to Information
Media representatives
13. Shreya Shah, writer and editor, IndiaSpend

Annex B. States covered in the survey

Source: Google

Student Data Capture Format (in sync with U-DISE)

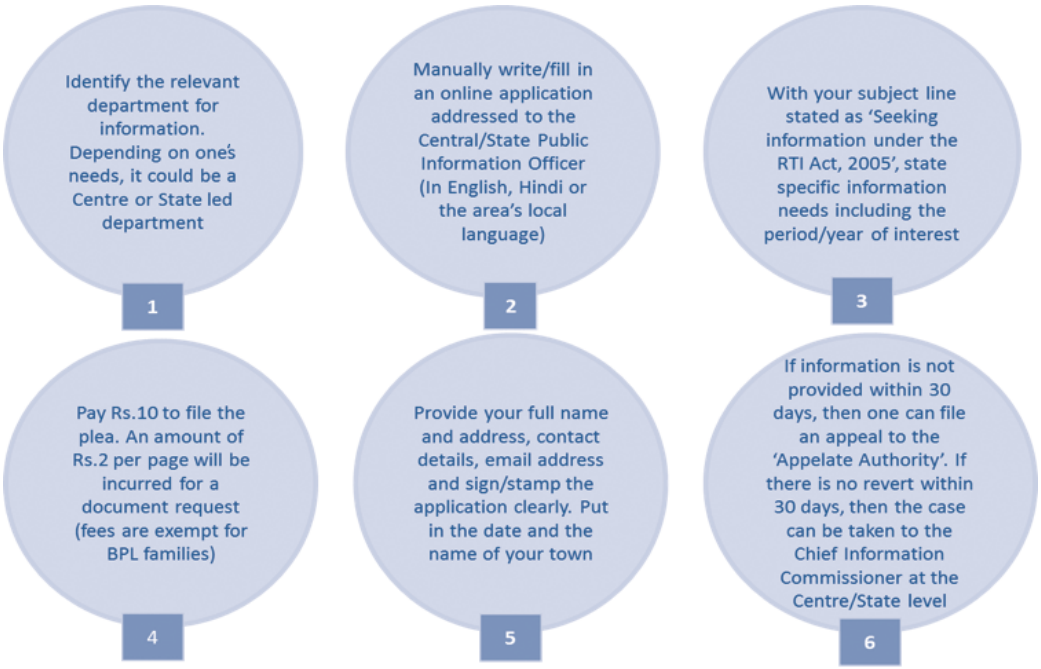
Name and Mobile # of respondent:_____

U-DISE Code (11 digits)			School Name:				Class:	Section:		Academic Year: 2016-17
Sl.	Variable name		Student 1	Student 2	Student 3	Student 4	Student 5	Student 6	Student 7	Student 8
1	Student's AADHAAR Number									
2	Name of the student* (Full Name)									
3	Father's Name* (Full Name)									
4	Mother's Name* (Full Name)									
5	Date of Birth (DD/MM/YYYY)*									
6	Gender (Boy=1, Girl=2, Other=3)									
7	Social Category (General=1,SC=2,ST=3, OBC=4)									
8	Religion*									
9	Mother Tongue*									
10	Name of Habitation or Locality (where student lives)									
11	Date of Admission (DD/MM/YYYY)*									
12	Admission Number*									
13	Whether belong to below poverty line*	(Yes=1, No=2)								
14	Belong to Disadvantaged Group*									
15	Getting free education as per RTE Act. (for private unaided school)									
16	Studying in Class	(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,0-Pre Primary)								
17	Class studied in the Previous Year*									
18	If studying in class 1, Status of the previous year*									
19	No. of days child attended school (in the prev. year)									
20	Medium of Instruction*									

21	Type of Disability* (if any)										
22	Facilities received by CWSN*										
23a	Facilities Provided to the student (for Govt./ Aided school)	No. of uniform sets (None=0, One Set=1, Two Set=2, Partial=3)									
23b		Set of free Text Books	(NA=0, Yes=1, No=2)								
23c		Free Transport									
23d		Free Escort facility									
23e		MDM beneficiary									
23f		Free Hostel facility*									
24		Child attended Special Training?*									
25	Whether the child is homeless*										
26	In the last examination	Appeared	(Yes=1, No=2)								
27		Passed									
28		% of Marks obtained									
29	Stream (For grades 11 & 12)*										
30	Trade / Sector (For grades 9 to 12)*										
31a	Tablets Received (for Govt. / Aided school)	Iron & Folic acid	(NA=0, Yes=1, No=2)								
31b		Deworming tablets									
31c		Vitamin-A supplement									
32	Student's Bank Account Number										
33	IFSC code of the bank branch										
34	Mobile Number (of student/parent/Guardian)										
35	Email Address (of student/parent/Guardian)										

<table>
<tr><td colspan="2">Description:</td><td>(8) Religion: Hindu=0, Muslim=5, Christian=6, Sikh=7, Buddhist=8, Parsi=9, Jain=10, Others=11</td><td colspan="2">(21) Type of Disability: NA=0,Visual(Blindness)=1,(Visual Low-vision)=2,Hearing impaired=3,Speech=4,Locomotor=5,Mental Retardation=6,Learning disability=7,Cerebral Palsy=8, Autism=9,</td></tr>
<tr><td colspan="3" rowspan="3">(9) Mother Tongue: Use codes of Medium of Instruction till code no. 29. Angami=41,Ao=42, Arabic=43,Bhoti=44, Bodhi=45,German=46,Kakbarak=47,Konyak=48,Laddakhi=49,Lotha=50,Maithili=51,Nicobaree=52,Oriya(lower)=53, Persian=54,Portuguese=55,Rajasthani=56,Russian=57,Sema=58, Spanish=59,Tibetan=60,Zeliang=61,Other=99</td><td>Multiple Disability=10,</td><td>(22) Facilities received by CWSN:NA=0,Braille books=1,Braille kit=2,Low vision kit=3,Hearing aid=4,Braces =5,Crutches=6,Wheel chair=7, Tricycle=8,Caliper=9,Others=10</td></tr>
<tr><td>(23 f) Free hostel facility: NA=0, KGBV=1, Non KGBV (Government)=2, Others=3</td><td>(24) Child attended Special Training: Not Applicable=0, Residential=1, Non-Residential=2</td></tr>
<tr><td>(25) Whether the child is homeless: NA=0, With Parent/Guardian=1, Without adult protection=2</td><td>(29) Stream code: Arts=1, Science=2, Commerce=3, Vocational=4, Other Stream=5</td></tr>
<tr><td colspan="2">(17) Class studied in the previous year: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 0- Pre Primary, None=99</td><td>(18) Status of previous year: Same School=1,Another School=2,Anganwadi-ECCE=3,None=4</td><td colspan="2" rowspan="2">(30) Trade/Sector: Agriculture=61, Apparel=62, Automotive=63, Beauty & Wellness=64, Banking Financial Services and Insurance (BFSI)=65,Construction=66,Electronics=67,Healthcare=68,IT-ITES=69,Logistics=70,Capital Goods=71, Media & Entertainment=72,Multi-Skilling=73,Retail=74,Security=75,Sports=76,Telecom=77,Tourism & Hospitality=78</td></tr>
<tr><td colspan="3">(20) Medium of instruction:Assamese=01,Bengali=02,Gujarati=03,Hindi=04,Kannada=05, Kashmiri=06, Konkani=07, Malayalam=08, Manipuri=09, Marathi=10, Nepali=11, Oriya=12, Punjabi=13, Sanskrit=14, Sindhi =15, Tamil=16,Telugu=17,Urdu=18, English=19, Bodo=20, Mising=21, Dogri=22, Khasi=23, Garo=24, Mizo=25, Bhutia=26, Lepcha=27, Limboo=28, French=29, Other=99</td></tr>
</table>

Annex D. Process for filing a Right to Information (RTI) application



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The case study

The number of countries providing access to school data to the general public has grown rapidly over the past decade, encouraged by the development of information technologies and under the pressure of social movements demanding the right to information. A wide variety of initiatives have been developed by both governments and civil society, to share school-level information in the form of 'school report cards'. These provide key information about a school, e.g. on student enrolment, funding, number of teachers, teacher qualifications, pupil–teacher ratios, conditions of school facilities, textbooks, and student achievement. But now that such data are in the public domain, how can it be ensured that they are used to promote not only transparency but also accountability in the education sector?

This case study compares the design and implementation of two major initiatives implemented in India – the school report cards developed under the Unified District Information System for Education (U-DISE), and the Annual Status of Education Report (ASER) programme. It covers the types of information published, who publishes it and how it is accessed; the critical data for improving transparency and accountability; how different categories of stakeholders access and use it; the requisite conditions for improving transparency and accountability; and the limitations of such processes.

The publication highlights the limited extent to which India's data-rich education system has effectively contributed to improving transparency and accountability. It concludes with a set of recommendations, including: building inter-operable, real-time data bases to enable ease of decision-making, strengthening on-line and off-line mechanisms for sharing data with the public, particularly at the school level, strengthening the link between U-DISE data and school level planning, and consolidating grievance redressal mechanisms.

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