

Information for Accountability: Transparency and Citizen Engagement for Improved Service Delivery in Education Systems

Lindsay Read

The Brookings Institution

Tamar Manuelyan Atinc

The Brookings Institution

Abstract

This paper explores what we know about the impact of information-based initiatives on increased engagement, accountability, or improved decision-making at the school-level, which could then lead to improved education quality and student learning. It summarizes and builds on recent large-scale conceptual frameworks and a growing evidence base of impact evaluations, and extracts lessons from case study research in Australia, Moldova, Pakistan, and the Philippines to provide nuanced insight into processes and mechanisms behind reform efforts. It also exploits findings from recent impact valuations after categorizing them according to the intensity of interventions and their target change agents -- parents, teachers, school principals, and local officials. The findings suggest that few initiatives have led to improved service delivery at the school level and evidence on enhanced learning outcomes is limited, in part because they are rarely tracked. While there is scope for improving such demand-side interventions, we conclude that systemic change will additionally require improved accountability mechanisms and greater use of relevant data and evidence internally within bureaucracies.

Introduction

There is wide consensus among policymakers and practitioners that despite increasing access to education, learning levels of children in school remain low and inequalities in enrollment and attainment persist. The International Commission on Financing Global Education Opportunity (2016) finds that only half of primary-school aged children and little more than a quarter of secondary-school aged children in low- and middle-income countries are learning basic literacy and numeracy skills. This echoes findings from the latest Uwezo assessment, which reveals that nearly half (46 percent) of Kenyan children aged 7-13 years are unable to read and understand a basic sentence – a finding that has remained largely unchanged for the past five years (Uwezo, 2015).

Significant research has attempted to pinpoint the reasons behind the quality deficit in education. Several studies have found that increasing inputs and spending are not strongly correlated with results and large differences in learning outcomes between countries are not easily explained by differences in socio-economic status (Woessmann, 2016; Pritchett, 2015). For instance, the Research on Improving Systems of Education (RISE) initiative finds that “students from equivalently poor households in Vietnam learn much more than their Peruvian counterparts” (Pritchett, 2015). It is clear that providing extra resources alone such as textbooks, learning materials, and infrastructure is ineffective to improve learning outcomes without also changing the underlying structural elements of education service delivery – pedagogy, teacher quality, learning environments, financing, and school management – all of which need to be underpinned by effective systems of accountability.

This focus on service delivery has spurred interrelated reforms at the school level, including decentralization, school-management committees, vouchers, teacher performance pay, school report cards, and transparency boards. The basic idea behind such reforms is that key problems in education delivery – corruption, inequity, inefficiency, marginalization, and insufficient resources – can be tackled locally at the school-level even if political systems disappoint at the national level. Key building blocks behind this wide range of reform strategies, and the focus of this report, are the parallel efforts of introducing or strengthening measurements for assessing school quality and learning, and of using this information to improve service delivery at the local level. The dissemination of more and better-quality information is expected to empower parents and communities to make better decisions in terms of their children’s schooling, and to put pressure on school administrators and public officials to make changes that improve learning and learning environments.

In recent years, such research has focused primarily on two related types of information-based initiatives: social accountability, which emphasizes the role of information in empowering citizen voice to hold actors accountable from the bottom-up, and increasing government transparency, which is more recently embodied in the *open government* and *open data* movements.¹

This paper takes a sector-specific look at information-based initiatives that operate at the intersection of these two strands, focusing on efforts designed to use information to enhance accountability and thereby influence education delivery and outcomes (Figure 1). It aims to explore the underlying assumptions behind information-based initiatives, understand under what conditions information can lead to improved service-delivery (and ultimately improved education quality and student learning), and to clarify the main mechanisms by which information generates increased engagement, accountability, or improved decision-making at the school-level. This paper summarizes and builds on recent large-scale conceptual frameworks and a growing evidence base of impact evaluations; extracts lessons from a number of case studies (see Appendix) to provide nuanced insight into processes and mechanisms behind reform efforts; and compiles, synthesizes, and categorizes recent impact evaluations according to the intensity of interventions and their target change agents (parents, teachers, school principals, and local officials) rather than assessing each tactic (ex: school report cards, open data platforms) separately.

This study aims to add value by reconciling the vast literature on bottom-up efforts to improve service delivery, increase citizen engagement, and promote transparency. Open data and social accountability tend to be treated separately in the literature due to competing intellectual foundations. The paper provides a sector-specific evaluation, whereas most analysis takes a high-level approach that spans different types of service providers, or is education-specific but addresses multiple types of interventions simultaneously. It focuses primarily on low- and middle-income countries, made possible by an influx of new research in the area

Framework for Thinking about Information and Accountability

The linkage between service delivery and accountability took root with the landmark 2004 World Development Report “Making Services Work for Poor People,” which identified service delivery failures as accountability failures. The report called for strengthening what it called the “short-route” of accountability – direct relationships between users and service providers – to compensate for entrenched failures in the “long-route” – via politicians and public officials (World Bank, 2003). Bruns, Filmer & Patrinos (2011) then applied this accountability framework to education. This paper focuses on accountability relationships found specifically at the point of delivery – the school – and including local government and mid-tier officials (such as at the district, regional, or division level) who have a significant role in the implementation of accountability mechanisms at the local-level.

¹ Various names have been given to fields of research in this vein, including Transparency and Accountability (T/A), Transparency, Accountability and Participation (TAP), and Voice, Empowerment, and Accountability (VEA), among others

Social accountability

Recently, increased attention has been paid to the idea that citizens could play a stronger role in holding local actors to account for the delivery of social services. Various terms “social,” “citizen-led,” or “demand-side” accountability, these initiatives are designed to engage citizens directly through improved transparency and access to information (Gaventa & McGee, 2013). Most generally, the assumed link leads from “awareness (through transparency and information) to empowerment and articulating voice, and ultimately accountability (changing the incentives of providers so that they change their behavior and respond to citizen engagement)” (Joshi, 2013). This process is distinct from “long-route” political accountability via elected officials and so is seen as especially relevant for countries where representative government is weak, unresponsive, or non-existent (Fox, 2015).

With social accountability initiatives, information shared with citizens is generally of two types: on rights, entitlements, and roles in attaining services; and on the quality and performance of service providers, either in terms of inputs (for example, teacher attendance, textbooks) or outputs (test scores, pass rates). Strategies for disseminating this information vary in intensity, from more passive information campaigns to more active interventions such as social audits or participatory budgeting:

- *Information campaigns*: Efforts to inform citizens about their rights to services, quality standards, and performance of service providers, typically by CSOs or media.
- *Citizen Report Cards*: Surveys carried out by citizen groups or independent bodies that capture consumer satisfaction and performance measures.
- *Community monitoring*: Efforts focused on monitoring observable features of performance or delivery, such as teacher attendance or textbook delivery
- *Social audits*: A participatory audit in which community members compare stated expenditures or services with actual outputs
- *Scorecards*: A hybrid of report cards, community monitoring, and social audits. A quantitative survey of citizen satisfaction with public services that includes a facilitated meeting between providers and beneficiaries to discuss results and agree on follow-up actions
- *Public Expenditure Tracking Surveys*: Tracking financial inflows allocated from the central level to providers, often done in a collaborative manner between the government, CSOs and community members
- *Participatory budgeting*: A decision-making process through which citizens deliberate and negotiate over the distribution of finances and resources.

Open data

More recently, an influx of digital technologies has dramatically expanded the information base, lowered dissemination and data management costs, and created more

efficient information goods. Between 2009 and 2012, for example, over 100 open data initiatives were launched by governments and nongovernmental organizations (NGOs) globally, including well-known national initiatives in Ghana and Kenya, and international initiatives such as the World Bank's Open Data portal (Davies & Edwards 2012). Such efforts have also been enshrined by multi-stakeholder initiatives such as the Open Government Platform and Open Data for Development Network.

These initiatives typically achieve their objective by collecting and presenting new or previously hidden information that can support the exercise of accountability, or by republishing or repackaging existing information in a way that makes it more usable (Avila, Feigenblatt, Heacock & Heller 2010). The underlying assumption behind these open data portals and other technology-based transparency initiatives is similar to that of social accountability initiatives – that technology will make information more transparent, which will increase civic participation, and provide incentives for providers to offer better services.

Mechanisms and change agents

In line with the more traditional theory of change between information, citizen action, and accountability, Bruns et al. (2011) identify three primary channels in which parents and citizens engage to hold education providers to account:

- Choice: providing parents with hard evidence about learning outcomes at alternative schools allows parents and students to go to their preferred schools
- Participation: by publicizing rights, roles and responsibilities and documenting service delivery shortfalls, information can be a motivator for action by citizens
- Voice: providing credible information provides content to feed the voice that citizens use to pressure governments (Bruns et al., 2011).

Underlying these mechanisms are several assumptions, including that “the exposure of poor performance will lead to greater responsiveness; that failures in service delivery are due to poor motivation on the part of public officials and not lack of resources or capacities; or that the existence of accountability and transparency mechanisms will have a deterrent effect on errant officials and make them behave better” (Joshi, 2013). Recent research has recognized the limits of such assumptions: transparency alone is rarely sufficient to produce accountability and more needs to be understood about explicit pathways that could lead to improved service delivery.

The following is a refined list of precise pathways to improved service delivery that may occur at the school level:

By citizens and communities:

- Communities can engage as local data collectors or verifiers for monitoring purposes, which may reveal service failures (for example, teacher absences) or discrepancies (number of textbooks or missing funds) that drive demand for improvements or reduced corruption (Westthorp, Walker, Rogers, & Overbeeke,

2014; Joshi, 2014)

- Information on positive school outcomes or stories of improved quality can motivate collective action by citizens (Westthorp et al., 2014; Joshi, 2014)
- Information on comparative indicators (ex: assessments or financing) can trigger collective action among communities based on the realization that similar groups are receiving dissimilar services (Joshi, 2014)
- Civil society can use information to build advocacy campaigns to draw attention to government behavior, such as corruption or inadequate or unequal school resource allocations (UNDP, 2013; Gigler & Bailur, 2014)
- Parents and students can respond to information about individual student performance by investing more time and effort outside of school, or increasing direct engagement with teachers and school administrators
- In contexts where choice among schools exists, comparative school-level information can impel parents or students to change schools

By service providers and local officials:

- Teachers, school administrators, or local officials can respond to monitoring or the collection of information (for example, student performance, attendance), either in anticipation of the application of rewards or sanctions or out of fear of a loss in status (Ringold, Holla, Koziol, & Srinivasan, 2012; Westthorp et al., 2014)
- Measurements of teacher quality (for example, classroom observation, student test scores) linked with set standards can be associated with improved teacher support, training, and collaboration, or precipitate the exit of low-quality teachers (Gill, Lerner, & Meosky, 2016)
- School-based management organizations can develop an understanding of school issues and needs, enabling either increased confidence or capacity to advocate for reforms (Westthorp et al., 2014)
- Teachers or school administrators can use assessment results as a diagnostic feedback mechanism, and respond by introducing or retargeting reforms or as a basis for lessons or tutoring sessions (de Hoyos, Garcia-Moreno & Patrinos, 2015)
- Teachers and school administrators can identify good practice within their own schools or at other schools, and set up mechanisms to propagate and share strategies for improvement
- School administrators can respond to market pressures by improving practices and performance, or by adjusting fees (Camargo, Camelo, Firpo, & Ponczek, 2014)
- School administrators and local officials can improve the monitoring of teacher or school performance or other school quality indicators
- Local officials can respond to pressure from school-level stakeholders to retarget and redesign reform policies or make changes to allocations of funding and inputs

Understanding *which* local actors use *what types* of information to *what end* is the first step in understanding how to create comprehensive data management and dissemination policies that support accountability channels within wider education systems.

Assessing the Evidence

Recent attempts to answer “what works?” have been inconclusive for several reasons. First, this is a new field of study, particularly in the case of open data, which means that evidence is fragmented, geographically concentrated, and difficult to generalize. Second, interpretation of the evidence is difficult given the complexity of relationships involved and the variety of potential pathways of change.

However, even more problematic is that remarkably few studies explicitly state the assumed connections between transparency, accountability, and citizen engagement, which limits understanding and applicability to other contexts. Heavily cited studies have found both failure (Banerjee, Banerji, Duflo, Glennerster, & Khemani 2010; Lieberman, Posner, & Tsai, 2014) as well as success (Reinikka & Svensson, 2011; Pandey, Goyal, & Sundararaman, 2011). But without a clear theory of change, it is difficult to know why initiatives failed. Was it, for example, due to the absence of enabling conditions or to the misalignment between the type of information and the audience, or because lack of information was simply not the only bottleneck to effective accountability relationships.

Evidence base

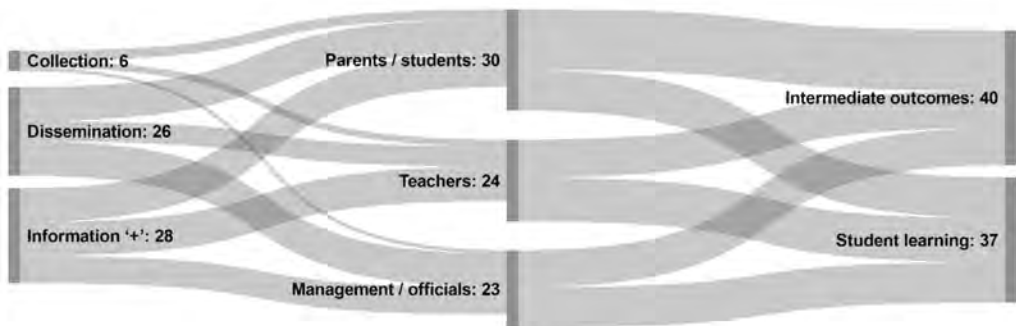
We have undertaken an exercise to assess impact evaluations with the aim of generating lessons on the component or design parts of information for accountability initiatives. We distinguish among a range of intensities of information interventions – based on whether information is collected (at its most passive), disseminated, or made actionable. We then tie these interventions to their associated change agents – those who are presumed to change behaviors in response to the information being collected or shared. We first build from a comprehensive theory of change between information and improved service delivery at the school-level and then categorize and assess 25 quantitative and qualitative evaluations within the education sector, ranging from experimental and quasi-experimental designs to observational case studies (Figures 2 and 3). Studies that assessed different components of interventions within a single country or context were separated and analyzed independently, bringing the total count in the analysis to 30 distinct intervention “arms.”

Figure 1. The intersection of social accountability and open data



Source: Read & Manuelyan Atinc (2017)

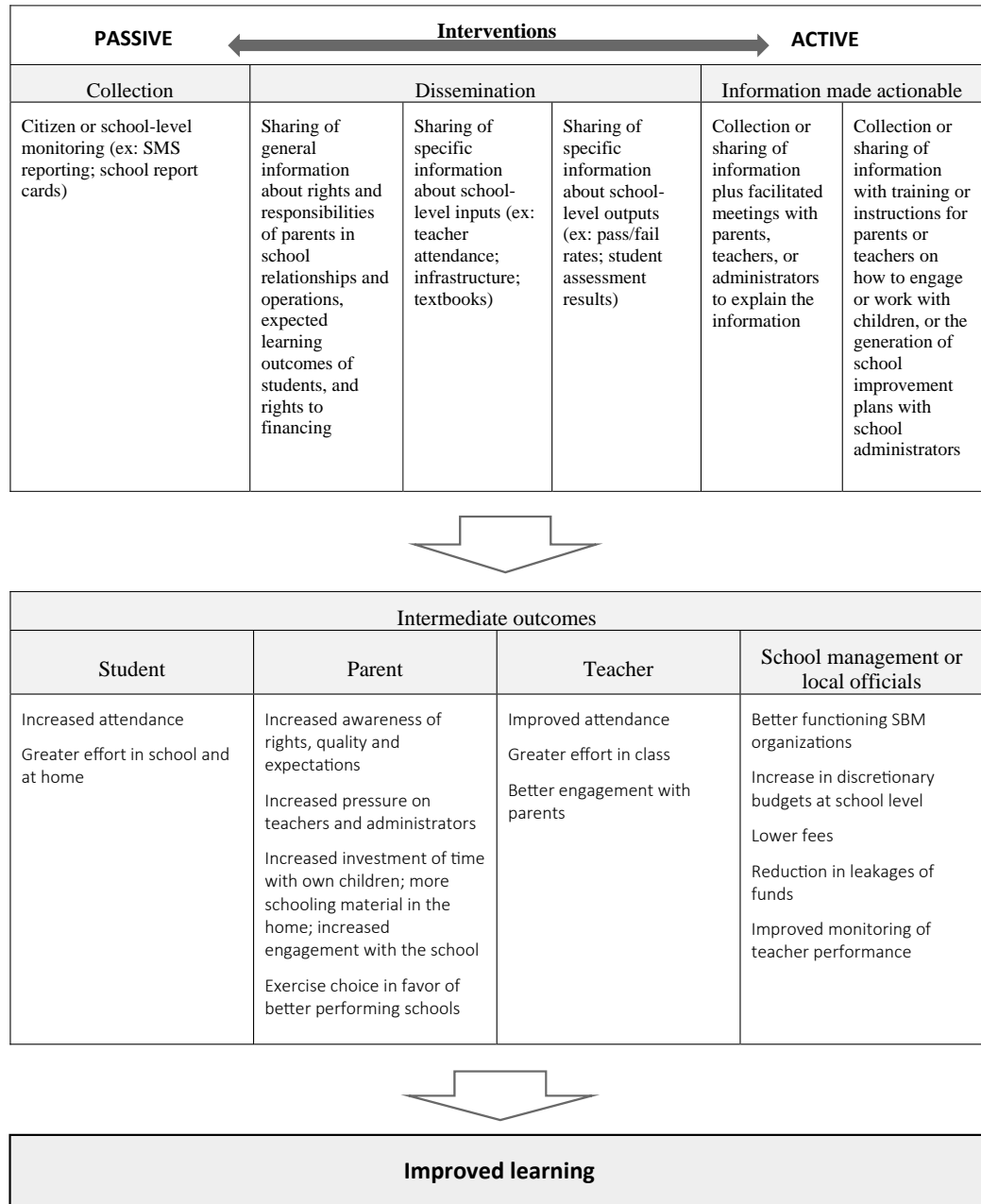
Figure 2. Map of components of information-based interventions in reviewed studies



Note: Many of the included 25 studies tested impact of multiple types of interventions, targeted change agents, and outcomes, so the numbers between nodes will not align perfectly.

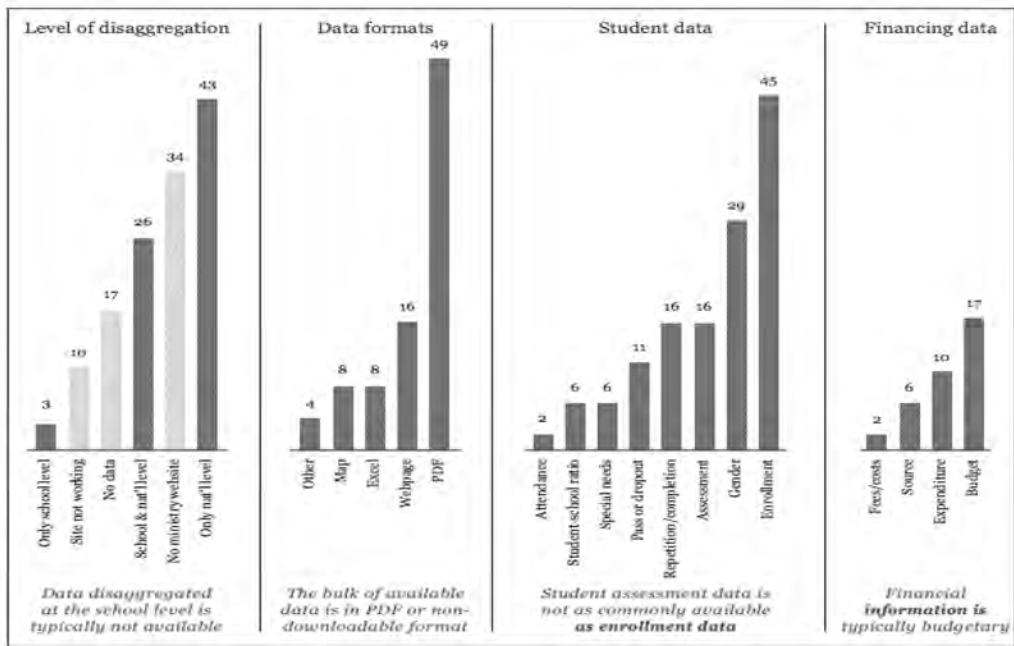
Source: Read & Manuelyan Atinc (2017)

Figure 3. Expanded theory of change: Using education information to improve learning



Source: Read & Manuelyan Atinc (2017)

Figure 4. Data available on Ministry of Education websites, by country



Note: Data collected from Ministry of Education websites in 133 low- and middle- income countries

Source: Read & Manuelyan Atinc (2017)

As the value of information provision is the main indicator of interest for this exercise, we have included only evaluations that isolate impacts of information from other “tied” reforms, such as hard accountability interventions that establish performance standards tied to sanctions or rewards, or diagnostic feedback interventions that are tied with different levels of training and follow-up actions (ex: pedagogical effects). We have also excluded studies without a set aim of improving education service delivery, which excludes a subset of interventions that provide information on the value or returns to schooling and influences the basic parental choice of whether to send their children to school at all. This would be an important area of follow-up for future research.

Within the 30 intervention arms that were analyzed, we found 60 distinct designs of information-based interventions, with nearly equal representation between efforts that simply opened information to the public domain and those that attempted to make information actionable through training or facilitated communications (Information ‘+’). We could identify only a handful of cases in which collection and monitoring efforts were assessed separately from hard accountability interventions. We found that these different types of interventions targeted change agents relatively evenly, with many interventions targeting multiple actors simultaneously. A little over half of the studies made comments on impacts on student learning outcomes.

Key Findings

Data collection interventions

We found four cases in which information was collected but not tied to sanctions or rewards. These cases varied in technological penetration, from simple scorecards or reports, to mobile monitoring through text messages and cameras verifying teacher attendance and class occurrence. Not surprisingly, since the number of cases included is small, it is difficult to draw conclusive lessons.

Monitoring needs to be tied to sanctions or rewards. These studies do suggest, however, that monitoring is most effective in cases where sanctions or rewards are implied, if not explicitly stated (Table 1). For instance, a randomized monitoring intervention in Niger, looking at the impact of mobile monitoring of an adult education program, found more pronounced positive effects on student learning where outside options for teachers were lower, suggesting that these teachers increased effort because of concern for not being able to find another job or source of income if punished for absences. Similarly, Duflo, Hanna, & Ryan (2012) found no independent effect of monitoring on teacher attendance or student test scores. However, when tied to financial incentives, both teacher attendance and student learning were substantially higher – test scores in treatment schools were 0.17 standard deviations higher than in comparison schools and, two and a half years into the program, children from treatment schools were 10 percentage points more likely to transfer to formal primary schools, which requires

Table 1. Local collection interventions

Study	Location	Details	Collecting Agents			Impact	
			Parent or Student	Teacher	School Management or Local Officials	Intermediate Variables	Student Learning
Aker and Ksoll (2015)	Niger	Weekly phone calls checking whether classes were held	✓	✓	✓		+
Barr et al. (2012)	Uganda	Scorecard on school-inputs implemented by SMC	✓			Null	Null
Duflo et al. (2012)	India	Students take pictures to verify teacher attendance	✓			Null	
Cilliers et al. (2014)	Uganda	Reports from head teachers verifying teacher attendance through SMS		✓		Null	Null

Source: Read & Manuelyan Atinc (2017)

passing a competency test.

An evaluation that tested two local monitoring schemes in rural primary schools in Uganda where head teachers were required to submit daily reports of teacher attendance found greater impacts when the collected information was tied with bonus payments: teacher attendance was higher, non-reports of absent teachers were less frequent, and reported presence was higher (Cilliers, Kasirye, Leaver, Serneels, & Zeitlin, 2014). While attendance was slightly higher in “information only” schools than in control schools, this was not statistically significant.

Dissemination interventions

The share of interventions that simply disseminate information without accompanying strategies to make the information actionable range from information campaigns with easy-to-read pamphlets delivered directly to parents to comprehensive online portals that aim to engage all stakeholders simultaneously. In addition to assessing impact on intermediate variables and student learning, we added an “awareness” variable for these cases, since a number of interventions have been implemented too recently to glean evidence of longer-term impact. Awareness here acts as a *first-order* variable, which would be necessary, but not sufficient, for further use of information to impel citizen or provider response.

In the absence of awareness, it can be assumed that these types of interventions would not show future improvements in service delivery. For the purposes of our analysis, when longer-term interventions presented impacts on either intermediate variables or student learning, we assumed that awareness had improved if outcomes were positive (and not applicable otherwise), even when the study did not explicitly address whether end users were aware of the information.

Success is context-specific. In line with previous research, we find that these “information only” interventions are highly context-dependent and are more likely to succeed in cases where lack of information is the only bottleneck for behavior change at the school level (Table 2).

A recent evaluation on an information intervention in Argentina (de Hoyos, Ganimian, & Holland, 2016) showed that providing diagnostic feedback to teachers on student performance on standardized math and Spanish tests led to significant impacts on student learning outcomes. The study found that simply providing information on outcomes was enough to push schools to a new equilibrium characterized by less asymmetry of information and a clear diagnosis of important challenges. This is likely because Argentina benefits from a comparatively responsive teaching force and, therefore, fewer capacity constraints to implementing pedagogical reforms than in other contexts.

Context is also important at the subnational level. For instance, three separate studies evaluate the release of national exam (ENEM) scores in Brazil, displayed online but also commonly disseminated through media in the form of ranking tables (Camargo et

Table 2. Dissemination interventions

Study	Location	Type of information	Format	Agents of Change			Impact		
				Parent or Student	Teacher	School management or Local officials	Awareness	Intermediate variables	Student learning
Camargo et al. (2014)	Brazil	Outputs	Website; newspaper		✓	✓		Null	Mixed
Cerdan-Infantes & Filmer (2015)	Indonesia	Rights and responsibilities	Pamphlet	✓			Null		
			SMS	✓			+	+	
de Hoyos et al. (2016)	Argentina	Outputs	Diagnostic report		✓	✓	+		+
Firpo et al. (2015)	Brazil	Outputs	Website; newspaper			✓	+	+	
Lepine (2015)	Brazil	Outputs	Website; newspaper	✓				Null	
McMurren et al. (2016)	Tanzania	Outputs	Website	✓	✓	✓	Null		
Mizala & Urquiola (2009)	Chile	Outputs	Newspaper	✓		✓		Null	
Reinikka & Svensson (2011)	Uganda	Rights and responsibilities	Newspaper	✓		✓	+	+	+
Shkabatur (2012)	Philippines	Inputs	Website	✓	✓	✓	Null		
Taut et al. (2009)	Chile	Outputs	Pamphlet; Report	✓	✓	✓	Null		
World Bank (2011)	Sri Lanka	Inputs; outputs; rights and responsibilities	Report card	✓	✓	✓		Null	Null
Young & Verhulst (2016)	Mexico	Inputs; outputs	Website	✓		✓	+		

Source: Read & Manuelyan Atinc (2017)

al., 2014; Firpo, Ponczek, & Possebom, 2015; Lepine, 2015). Camargo et al. (2014) find no effect of the release of ENEM scores on either school composition or observable inputs (number of enrolled; proportion of teachers with college degrees; ratio of computers to staff, and teachers to students; probability of having computer and science labs). Similarly, Lepine (2015) finds no impact on enrollment in either private or public schools, and no loss of students in poorly performing schools.

In contrast, Firpo et al. (2015) finds that the release of ENEM scores led to changes in private school tuition fees, an increase of one standard deviation in the school average test score was associated with a price increase of R\$41 in monthly tuition fees, and Camargo et al. (2014) finds positive effects on private school test scores. These results suggest that the private providers in Brazil have the ability and incentives to respond when relevant information about school performance is made available.

Targeting a specific audience helps. These findings from Brazil also suggest that information is most likely to lead to successful interventions when it is directed at the management level, either exclusively or in tandem with teachers or parents. Lepine’s study (2015), which assessed whether parents respond to information by changing schools, showed null effects, whereas both Camargo et al. (2014) and Firpo et al. (2015) demonstrated positive effects of information on provider response in the context of the private school market.

Similarly, a widely cited study by Reinikka & Svensson (2011) illustrated the success of a newspaper campaign in reducing capture of school capitation grants. The authors credited the reduced corruption to incentives faced by district officials, who believed that the threat of punishment had increased since local politicians had signaled the prioritization of education as well as strengthened systems of oversight. The positive effect on student achievement was also credited to school administrators allocating more funds to nonwage items such as textbooks, school meals, and flipcharts. Hubbard (2007) warns against overestimating Reinikka & Svensson’s results, however, clarifying that the information campaign took place alongside concurrent reforms in Uganda’s education system, which likely “strengthened the resolve within the Government for reform and also hardened the resolve of the donor community to reduce leakages.” In this case, it is likely that the disclosure of information was a necessary, but not sufficient, condition for improvement.

Conversely, interventions are more likely to fail when information is not targeted to a specific audience. All four cases where information was provided with the aim of engaging all stakeholders – parents, teachers, and school- and district-level officials – failed to demonstrate any awareness of or use by the end users. This is demonstrated by the failure of open data platforms in both Tanzania and the Philippines to generate awareness or use. This is partly due to the low internet penetration in both countries, but also the fact that “both the public and policymakers are looking for the insight contained in the data, not the data itself.” Or, to put another way: “Data is frightening for many people, so raw data is going to appeal to a vanishing few. Open data needs to be open plus curated plus chewed plus digested to appeal to most people, including policymakers” (McMurren et al., 2016).

Moreover, Taut, Cortes, Sebastian, & Preiss (2009) demonstrated that the assumptions behind the publication of SIMCE data (the national student achievement testing system) in Chile are actually at odds: parents were expected to exercise school choice based on school quality information and, at the same time, engage more regularly

with teachers and administrators to improve learning; teachers were expected to use SIMCE data as a formative, diagnostic tool to improve pedagogical practice in the classroom in response to increased parental pressures; and directors and administrators would use SIMCE to support school-level actions based on relevant indicators of learning. However, Taut et al. (2009) note that the formative feedback purpose and the accountability purpose stand in contradiction – at once, parents were expected to “vote with their feet” (i.e., choice) and shift from low-performing schools to higher-performing schools, but also act as drivers of change and engage with schools more frequently during parent meetings where such information is shared (i.e., voice). The authors stated that the two expected reactions necessarily demand different communication strategies, for example, “comparison tables to inform parental school choice versus in-depth information on school performance to empower parents to request school improvement.”

Information interventions need to therefore carefully consider the audience as well as the presumed causal pathway to improve service delivery. An interesting strategy is used in the case of Mexico’s *Mejora Tu Escuela* (Improve Your School) project, which comprises two parts: a public-facing platform targeted at parents and other citizens with information on schools and tools to address shortcomings, and a focus on the public-policy side that reports on problems with transparency, corruption, teacher payrolls and the like (Young & Verhulst, 2016). The two aspects of the project are mutually reinforcing, but are specifically designed with different audiences in mind.

Information made actionable (‘Information +’)

Overall, it is clear that information interventions are far more likely to succeed when they are implemented in combination with direct avenues of promoting action, either through facilitated meetings, the design of a school improvement plan, or providing training or instruction on how to improve student learning. Of 13 unique interventions, nine show positive impacts on either intermediate variables or student learning (or both) (Table 3). This suggests that lack of information is only one constraint among many in delivering quality education.

Most interestingly, results varied in a program in Indonesia that provided parents with information on entitlements under the school grants program depending on the intervention design. When combined with facilitated meetings, the program led to increased participation by parents in formal channels for providing feedback to school (Cerdan-Infantes & Filmer, 2015). However, in the case where information was provided only on pamphlets with no associated meetings, no impact on parental engagement was seen. Similarly, when information was provided over SMS, parents only tended to increase participation through informal channels rather than in school-committee meetings.

The audience matters. Previous findings that interventions are more likely to lead to success if they are directed at the management level also hold for “information +” interventions. Of the six interventions that show no impact on either intermediate

Table 3. Information Made Actionable (“information +”)

Study	Location	Type of information	Format	How the information is made actionable	Agents of Change			Impact	
					Parent or Student	Teacher	School management or Local officials	Intermediate variables	Student learning
Andrabi et al. (2013)	Pakistan	Outputs; Inputs	Report card	Facilitated meetings where parents can discuss freely	✓		✓	+	+
Banerjee et al. (2010)	India	Rights and responsibilities	Pamphlet	Facilitated meetings	✓	✓		Null	Null
		Rights and responsibilities; Outputs	Pamphlet; scorecard	Facilitated meetings plus training for monitoring and preparing scorecards	✓	✓		Null	Null
Barr et al. (2012)	Uganda	Rights and responsibilities; Inputs	Scorecard	Facilitated meetings to define objectives, roles, and indicators of school progress	✓	✓	✓	+	+
Cerdan-Infantes & Filmer (2015)	Indonesia	Rights and responsibilities	Poster	Facilitated meetings	✓			+	
de Hoyos et al. (2016)	Argentina	Outputs	Diagnostic report	Support to design and implement a school improvement plan		✓	✓		+
de Hoyos et al. (2015)	Mexico	Outputs	Diagnostic report	Facilitated discussion on how to address performance weaknesses; school improvement plan		✓	✓		+
Galab et al. (2013)	India	Rights and responsibilities	Scorecard	Facilitated meetings; training on effective management; training on monitoring	✓	✓	✓	+	+
Lassibille et al. (2010)	Madagascar	Inputs; outputs	Report card; guidebook	Facilitated meetings; workflow templates and tools; training on motivating better performance; instructional guidebooks		✓	✓	+	Null ¹
Lieberman et al. (2014)	Kenya	Outputs	Calendar; poster; SMS; flyer	Parents given strategies to improve learning	✓			Null	
Muralidhran & Sundararaman (2010)	India	Outputs	Diagnostic report	Instructions on how to use performance reports and benchmarks		✓		Null	Null
Pandey et al. (2011)	India	Rights and responsibilities	Film; poster; calendar; booklet	Facilitated meetings and clear pathways for complaints outlined	✓			+	+
Wild and Harris (2011)	Malawi	Inputs	Scorecard	Facilitated meetings; Joint development of action plans	✓	✓	✓	+	
World Bank (2011)	Sri Lanka	Inputs; outputs	Report card	Training in management structures and participation; joint preparation of school development plan	✓	✓	✓	Null	Null

Note: Test scores were slightly higher in treated schools, but not statistically significant.

Source: Read & Manuelyan Atinc (2017)

variables or student learning, five did not attempt to engage school administrators or district managers. However, in contrast to dissemination interventions, “information +” interventions are not as strongly associated with null impacts when all stakeholders are targeted simultaneously. Of four unique interventions that engage parents and students, teachers, and administrators, three were successful. It is not clear whether this is due to differences in use of non-technological methods of dissemination, such as scorecards and pamphlets, as opposed to online formats, or that facilitated meetings and other strategies were the key to overcoming coordination problems or facilitating action.

Parents act on particular types of information. Also, in contrast to dissemination interventions, the results related to interventions that particularly target parental engagement are more mixed. In these cases, it appears that what matters most is the *type* of information being shared. To be more specific, parents do not appear to act upon information on school outputs, but seem far more likely to respond to data on inputs or information clarifying the roles and responsibilities of parents to schooling. For example, an intervention that provided parents information on their oversight roles in schools and education services in the Indian states of Uttar Pradesh, Madhya Pradesh, and Karnataka led to improved learning outcomes and reduced teacher absenteeism, driven by increased participation of parents in school committee meetings (Pandey et al., 2011).

Conversely, a study by Lieberman et al. (2014) found that providing parents with information about their children’s performance on literacy and numeracy tests led to no impact on parental behavior or engagement, even when combined with materials about how to be more involved in improving their child’s learning. This can be partly explained by low expectations of parents regarding school quality. For instance, in the case of Mexico, parents are largely satisfied with their children’s education despite the fact that the country performs poorly on various global measurements of education quality (Young & Verhulst, 2016). This underscores the need to relay information on rights and entitlements beyond just performance data, either by setting explicit standards or by providing a means to compare quality measures in different contexts, alongside tools and strategies to hold providers to account.

Implementation Considerations

Given the middling evidence base in support of the assumption that data transparency necessarily leads to data use and action, it is essential to consider barriers to data use as well conditions that may be necessary for impact. The following section explores some general lessons, divided into two elements: enabling conditions and design considerations (Table 4).

Table 4. Implementation of information-based interventions

Enabling Conditions	
Political	<ul style="list-style-type: none"> • Incentive to release data and respond to demand • Culture of accountability • Capacity and decision-making capabilities
Societal	<ul style="list-style-type: none"> • Strong public demand for information • Legitimate, independent, capable, and engaged CSOs and media
Technological	<ul style="list-style-type: none"> • Affordable, available, and accessible technology
Legislative	<ul style="list-style-type: none"> • Established data policies and regulations
Design Considerations	<ul style="list-style-type: none"> • Data quality and availability • Digital and societal divides • Tension among stakeholders
Source: Read & Manuelyan Atinc (2017)	

Enabling conditions

Recent systematic reviews in both the social accountability and open data fields (Westhorp et al., 2014; UNDP, 2013; O’Meally, 2013; van Schalkwyk, Willmers, & Schonwetter, 2015; Ubaldi, 2013; Janssen, Charalabidis, & Zuidervijk, 2012; Menocal & Sharma, 2008; Gurstein, 2011; Joshi, 2014; Verhulst & Young, 2016) have identified several contextual factors that appear to matter most for information-based initiatives. The social accountability literature emphasizes the importance of political and societal environments in shaping the impact of reforms, but as open data initiatives have become more prominent in development agendas, enabling conditions have been broadened to also include technological and legislative factors.

(a) Political conditions

Social accountability and open data initiatives are typically classified as demand-side interventions – i.e., enabling and empowering citizens to hold unresponsive political actors and service providers to account in fulfilling their roles and responsibilities to the people. However, the success of such initiatives hinges not only on citizen actors, but also on parallel efforts from the supply side to address changing demands and expectations. Importantly, the supply-side of the accountability equation includes actors within the “middle tier” of the institutional system – for example, local government bureaucrats, district officers, school principals – especially in view of increasingly decentralized decision-making in the education sector.

Broadly speaking, this responsiveness is a function of high-level support, the strength of existing processes of accountability, and institutional capacity.

High-level Support: There is increasing agreement that service delivery weaknesses that appear on the surface to be capacity limitations actually have more to do with

incentive structures (Booth, 2011). In terms of information-based reforms, these incentive structures are twofold: governments must be willing to both open up data for dissemination and use (or at the very least not stymie efforts by independent collecting actors such as CSOs), as well as be willing to engage and respond to increased demands for reform.

Not surprisingly, many government officials are hesitant to release data to the public. This stems from fear associated with being questioned or sanctioned about the information contained in datasets, as well as a concern that truly open data can be edited in such ways that harm the integrity of the data, and even manipulated to show government actors in a negative light. The latter results in many data sets being released in formats such as PDF files that make analysis and re-use difficult.

Alongside this mindset of fear, institutional culture is built in such a way that ownership of data can be used to exert power and influence (Lwanga-Ntale, Mugambe, Sabiti, & Nganwa, 2014). Making information more transparent thus threatens traditional power relationships, with benefits falling to data *users* rather than data *releasers*. Also, beneficiaries are widespread, whereas those that stand to lose the most from the release of data are more concentrated. This makes the process of making data more transparent quite difficult, especially considering the large costs associated with building the necessary infrastructure of data systems, including the collection, cleaning, reconciliation, and publication of data. This skewed risk-reward calculus demands high-level champions in key positions to take on the cause of transparency, as was the case in Australia with the perseverance of Prime Minister Julia Gillard in promoting the My School platform despite significant opposition from teachers and teacher unions (Gerbase, et al., 2017).

Culture of Accountability: Political will is often a symptom of the larger policy culture where systems of accountability have been institutionalized in practice. This predisposition of the state to encourage citizen engagement or open up data to scrutiny is often linked to the extent of democratization, though some researchers recognize that democracy is an imperfect measure of policy culture. For instance, democracies can be dominated by technocratic styles of policy making that is insulated from the public, which may hamper the success of social accountability or open data reforms (UNDP, 2013). So, too, autocracies or heavily centralized governments may still promote inclusive accountability mechanisms as a means to monitor and manage public officials at the local level (World Bank, 2016a). This is demonstrated by a recent example from a social accountability initiative in China that was able to work collaboratively with local government officials to improve conditions for people with HIV, despite a restrained legal space that limited the ability of CSOs to conduct advocacy campaigns (Wetterberg, Brinkerhoff, & Hertz, 2016).

Institutional Capacity: In practice, even when they are willing to open and disseminate data sets, many governments are struggling to build the capacity needed to institute comprehensive data systems. It takes a great deal of sustained effort to collect, interpret, translate, and share data, including managing the difficult first steps of deciding

what and how to measure and how to address privacy concerns. Moreover, by virtue of the allocation of decision-making functions in the education system, school administrators and local officials are often constrained in their ability to effect changes in rules or behavior that are needed to respond to demands for reform. For instance, information on school-level budget allocations is less useful if schools do not have at least some responsibility over spending decisions.

(b) Societal conditions

Capacity and willingness of the *public* to engage with data are as important as on the supply side – absence of either distorts the accountability ecosystem (Lwanga-Ntale et al., 2014). Importantly, strong public demand must exist from all levels of civil society, particularly from data users such as citizens, community members, media, and academic researchers. In addition, users must have the capacity to access, understand, and act based upon available information. These accountability processes and relationships are undermined by contexts with high levels inequality, social exclusion, or fragmentation (O’Meally, 2013).

Beyond the capacity and demand of individual citizens, the success of information-based initiatives depends on civil society organizations, research groups or media that often mediate the collection and dissemination of information. When the ability of citizens to understand, process, and act on information is constrained, these “infomediaries” can help translate and communicate information in more easily actionable ways. These groups may also help shrink wide inequalities by specifically providing information and channels for change to the most marginalized.

(c) Technological conditions

New technologies for transparency and accountability initiatives are wide-ranging and generate a lot of excitement – social media platforms, text messages, cloud services, mobile apps, and web interfaces. The increasing popularity of open data initiatives has placed a heavy burden on both citizens and states as they seek to establish the necessary technological infrastructure to radically upgrade data and transparency systems.

For low- and middle-income countries, however, the latest technologies may not be the best platform for data collection and dissemination. Many information-based initiatives have found the greatest success with SMS or radio campaigns, or even at the most low-tech, with newspapers or simple paper pamphlets and posters (Cerdan-Infantes & Filmer, 2015; Pandey, et al., 2011). Also helpful are accounts that interpret the data or stories that demonstrate successful action. The key to success is that the platforms for collection and dissemination are tailored to the end user.

(d) Legislative conditions

As more data are collected and this information becomes more open, tensions arise between demands for transparency and the right to privacy. As such, open data and social accountability initiatives are more likely to succeed in states with established data policy and regulations, including open data licenses that establish who owns and who is able to use and access data, and that clarify complexities found with competing legal frameworks for copyright and related rights.

It is clear, however, that privacy considerations are not yet part of the global drive toward open data. A recent report by the Open Rights Groups, a digital privacy campaigning organization, found that “the regulation of privacy in the developing world is very patchy,” and that the vast penetration of digital technologies leads to a “very high” risk of privacy violations (Open Rights Group, 2014). Moreover, open government data policies often still belong to existing legal freedom of information frameworks, resulting in uncertainty about the legality of data reuse and publication (Attard, Orlandi, Scerri, & Auer, 2015).

Design considerations

Even the most enabling contexts do not ensure that transparency and accountability initiatives will take hold and create impact. As Joshi (2014) noted, assessing the enabling conditions of a particular context – especially deeply rooted societal and political structures – is most helpful in identifying whether open data reforms should be considered at all. By contrast, design considerations help tease out the local factors that affect how information-based initiatives unfold within otherwise broadly similar contexts.

(a) Data quality and availability

A simple but critical point is that transparent data systems are only as strong as the source data. In some cases, making data systems transparent will simply be a matter of making existing data available to the public, or adapting existing data sets to be more accessible or useful to consumers. For instance, in Australia, most of the data made available on the My School website were already being compiled by schools or state and territory governments. In addition to these existing data sets, though, the My School initiative also devised an Index of Community Socio-Education Advantage (ICSEA), which provides schools a score based on socio-educational advantage and enables comparisons of similar schools.

In most countries, however, a necessary first step will be instituting structured and timely data collection systems to fill large data gaps, either by governments themselves or capable and trusted infomediaries that are able to collect missing data or data that can be used to contest or validate official information. For instance, when the Mexican Congress

passed legislation requiring states to provide the federal government with information on school conditions and expenditures, follow-through was weak, with 12 of 32 states handing over empty or incomplete databases. In 2013, the *Mejora Tu Escuela* initiative stepped in to provide parents and other stakeholders comprehensive data on schools and payroll information to empower officials to root out ghost teachers and other forms of corruption (Young & Verhulst, 2016).

There are many barriers to the use of government data, even when collection efforts are considerable. Specifically:

- Often, data are kept in formats such as PDFs that are not machine-readable because that is the form the data are collected, or governments are hesitant to release data that may be manipulated (Sabiti, 2014; Canares, 2014)
- Data that are released are often the low-hanging fruit, such as national budgets, that is of little value to consumers and thus have little influence over accountability relationships (Lwanga-Ntale et al., 2014; Khan & Foti, 2015). A recent Open Data Barometer study found that “although more and more countries are making open data available, politically sensitive datasets and those that are crucial to supporting accountability efforts are among the least likely to be published” (Davies, 2014).
- Data that are available are often not detailed or disaggregated to the sub-national level, and thus are less useful to strengthen accountability relationships at the point of service delivery (DI, 2014).
- Data are not easily comparable, as every agency has its own formats, standards, and data collection processes, making it difficult to know which data are valid (Ubaldi, 2013). This becomes particularly complicated for education systems, as a large percentage of education and learning data is collected by non-profit organizations and private companies.
- Data in government repositories are often incomplete, untimely, or inaccurate due to capacity, financial, and time constraints (Ringold et al., 2012; Ubaldi, 2013)
- Methodologies employed in data collection and analysis are often not transparent and may not be based on rigorous or verified processes (Sabiti, 2014)
- National statistics can be systematically inflated due to skewed incentives, such as overstating development progress to satisfy international donors (Sandefur & Glassman, 2015).

The misrepresentation of data does not always happen by accident or as a result of lack of analytical capacity, but rather due to systematic biases in administrative data systems. Even evidence from Kenya, who was one of the first countries on the continent to have a comparatively well-functioning open data platform, revealed stark differences between enrollment rates as stated by the Ministry of Education (99 percent) and the DHS (87 percent) (Sandefur & Glassman, 2015). Of course, donors and other stakeholders can play a strong role in ensuring that incentives to misrepresent are mitigated and set up mechanisms for validating incoming data, such as in Pakistan, where independent monitoring units used various verification processes – school randomization, real-time

collection, geo-location, e-signatures, and spot-checks – when collecting data on key education indicators.

To demonstrate these limitations, we undertook an exercise to assess the quality and availability of data on Ministry of Education websites (Figure 4).² We found that, of 133 low- and middle-income countries assessed, nearly half (61) have no available data, either because no ministry website exists or because data were missing or prohibitively difficult to access. Of the remaining 72 countries, 43 have data only at the national level (non-disaggregated), leaving only 29 countries with sufficiently disaggregated school-level data. Moreover, of data that are available, the majority are in PDF or non-downloadable format. In addition, while student data are the most commonly available type of data available on ministry websites, only 16 countries provide information from student assessments.³ So, too, information on financing is generally on budgets rather than expenditures, when it is available at all.

(b) Inequalities in societal structures

Digital divide: Despite ample excitement about the role of technology in disrupting stagnant accountability relationships and bringing citizens to the fore in decision making processes, it is clear that everybody does not benefit equally – or derive what the latest World Development Report terms “digital dividends.” This is for two reasons: 60 percent of the world’s population remains offline, and emerging risks of digital technology may outweigh the benefits, such as in cases where it amplifies the voice of elites at the expense of the technologically marginalized, resulting in policy capture (World Bank, 2016b). Not surprisingly, it is the better educated, more connected, and economically advantaged that have benefited the most from the growth in ICTs. As Gurstein (2011) highlights, the primary impact of open data may be to further empower and enrich the already empowered.

Even when interventions succeed in reaching the most marginalized, they generate additional concerns. Poor communities have the least amount of time and resources to, for example, attend school-based management meetings, monitor activities of teachers, give feedback through redress mechanisms, or track school budget allocations—a form of “time poverty” as illustrated in widely cited research by Mullainathan & Shafir (2013). In addition, such marginalized populations often face the highest social cost to action, such as facing repercussions from those in positions of power when exposing corrupt practices.

Voices are not homogenous: “Voice” is often understood as representing a unified concept – used as simple shorthand for “voices of the poor.” In reality, however, “the

² It is important to note that data could be potentially contained on websites other than official ministry websites, but this was beyond the scope of the exercise.

³ It is not clear what proportion of countries do not collect this information versus countries that choose not to share on official ministry websites.

voices of the poor (as well as those of other groups) are far from homogeneous – and these many voices may not be necessarily complementary, and may actually compete with one another” (Menocal & Sharma, 2008). This harkens back to the digital and data divide, where certain groups (often male, well-off, and well-educated) are better able to engage and have their voices heard at the expense of the more marginalized. Similarly, in much of the literature, citizens, front-line providers, and governments are spoken of as homogenous entities with similar development goals. However, actions promoted by groups of citizens can be at odds with national priorities, which are set according to both practical and political motivations.

(c) Tension among stakeholders

Many information-based reforms are premised on the notion that localized efforts at the school level have the potential to generate positive outcomes even in cases where national efforts disappoint. These initiatives often do not take into account, however, the locus of decisionmaking and availability of resources. The result is that initiatives can be misaligned with existing accountability and management structures, which limits effectiveness, sustainability, and scalability.

Teachers: Due to the political strength of teacher unions, governments may be hesitant to implement sanction-based reforms directly targeting teachers even if teacher quality may be identified at the local level as a primary weakness in the system. As such, local information for accountability initiatives may have little impact in cases where decisions about the hiring and retention of teachers and teacher salary are made higher up the administrative chain and not at the school level, or where local school committees are not equipped or empowered to put “teeth” into renewal decisions or to sanction poor performance or frequent absences (Bruns et al., 2011).

For instance, research from Kenya found that students randomly assigned to contract teachers performed better on tests, yet regular teachers put forth less effort despite smaller pupil-teacher ratios. This was presumably because regular teachers did not face the same possibility that contracts would not be renewed as contract teachers. However, in cases where parent committees were trained and empowered, regular teachers were less likely to decrease their efforts. In a separate experiment, a well-functioning parent council also reduced the level of capture by regular teachers attempting to hire their relatives (Duflo, Dupas, & Kremer, 2012).

Local governments: At another level, the potential impact of information for accountability initiatives on financing decisions depends on schools’ or district officials’ level of authority in how budgets are spent versus the central government. Autonomy in the planning and management of school budgets allows school administrators to identify and shift spending to areas of need (for example, infrastructure or performance bonuses) and may even allow parents’ input into budget allocation decisions.

Citizens: Social accountability initiatives are premised on the assumption that

citizens are more aware of local matters and shortcomings, and thus better placed to recommend or retarget reforms. However, they may “act in a way that does not improve {service} quality or may even undermine it” (Ringold et al., 2012). For instance, a recent review of the Twaweza initiative in Tanzania found that parents revered teachers as utterly dedicated and are hesitant to support the use of sanctions or strengthened accountability mechanisms against them, even when faced with evidence of an opposite reality, such as teachers with high absenteeism, low motivation, and a low skill base (Lipovsek & Mkumbo, 2016).

Moreover, evidence from India suggests that parents were more interested in immediate benefits for their own children rather than broader issues of learning or education quality. In facilitated meetings, parents were most animated about students’ scholarships and a midday meal program (Khemani, 2007). Such cases show that reliance on parental concerns alone can hinder the potential for collection action that is required to have an impact on larger education systems.

Conclusion

A select number of cases reveal the potential of information for accountability initiatives to be a strong tool for improving service delivery at the school level. In some circumstances, the process of opening information to the public has reduced corruption; improved managerial, parental, and teacher effort; and led to more efficient targeting of reforms and resources at the school level. However, evidence shows that this potential is limited, and even under the best of circumstances information has not provoked citizen action as expected. It has been difficult to replicate the small number of successes in other contexts, and it is clear that without a better understanding of the underlying mechanisms of change, as well as enabling conditions for citizen action and supply-side response, scaling such successes will remain a challenge.

Nor is it clear that engaging citizens in holding service providers to account will lead to positive and systematic impacts on learning. In fact, opening data to the public has the potential to lead to adverse effects such as empowering the already empowered, teaching to the test, misrepresenting data, and burdening the marginalized who can ill afford to divert time away from generating their livelihood. Also, even when the benefits from information for accountability initiatives are significant, there are little data on the costs associated with them to assess the cost-effectiveness of different strategies for improving education outcomes.

A more positive, systemwide impact on education and learning (rather than localized effects) will likely require that such demand-side interventions are complemented and reinforced by internal accountability mechanisms within the bureaucracy that rely on evidence-based policymaking and strong feedback loops. There is clearly room to build on lessons learned from social accountability interventions to improve their impact—by linking information to specific paths of action; thoughtfully targeting the appropriate type

of data to the relevant actor and location of responsibility; empowering infomediaries; and working with the grain of existing accountability mechanisms. But the delivery of quality education for all depends just as much on the capacity and willingness of governments to assess reform options and trade-offs as they respond to increased citizen engagement. They can also, independently of community engagement, leverage timely and robust data and information systems to improve service delivery within the larger education system.

Acknowledgements

We are grateful for case study research support provided by Kashif Khan at the Center for Universal Education at Brookings; Diana Engel Gerbase, Chiara Lawry, Sarah Lux-Lee, Surya Kiran Palukuri, Hannah Poquette, Vincent Lee Quan and Hans-Martin Boehmer at Columbia University School of International and Public Affairs; Kashmali Khan, Taimur Adil, Hina Khan, and Irfan Muzzafar at Adam Smith International; Aniceto C. Orbeta at the Philippine Institute of Development Studies; as well as data and analytic support from Grace Chen and Soujanya Ganig at the Harvard Graduate School of Education.

References

** Titles with an asterisk refer to studies included in the systematic review*

- *Aker, J. C., & Ksoll, C. (2015). Call me educated: Evidence from a mobile monitoring experiment in Niger. (Working Paper No. 406). Washington, DC: Center for Global Development.
- *Andrabi, T., Das, J., & Khwaja, A. I. (2013). Report cards: The impact of providing school and child test scores on educational markets.
- Attard, J., Orlandi, F., Scerri, S., & Auer, S. (2015). A systematic review of open government data initiatives. *Government Information Quarterly*, 32(4).
- Avila, R., Feigenblatt, H., Heacock, R., & Heller, N. (2010). *Global mapping of technology for transparency and accountability*. London, UK: Open Society Foundation.
- *Banerjee, A. V., Banerji, R., Duflo, E., Glennerster, R., & Khemani, S. (2010). Pitfalls of participatory programs: Evidence from a randomized evaluation in education in India. *American Economic Journal*, 2(1), 1-30.
- *Barr, A., Mugisha, F., Serneels, P., & Zeitlin, A. (2012). *Information and collective action in communitybased monitoring of schools: Field and lab experimental evidence from Uganda*. (Preliminary Draft).
- Booth, D. (2011). *Working with the grain and swimming against the tide: Barriers to uptake of research findings on governance and public services in low-income Africa*. (Africa Power and Politics Programme Working Paper No. 18). London, UK: DFID.
- Bruns, B., Filmer, D., & Patrinos, H. A. (2011). *Making schools work: New evidence on accountability reforms*. Washington, DC: World Bank.

- *Camargo, B., Camelo, R., Firpo, S., & Ponczek, V. (2014). Information, market incentives, and student performance. (IZA Discussion Paper No. 7941). Bonn, Germany: Institute for the Study of Labor (IZA).
- Canares, M. P. (2014). Opening the gates: Will open data initiatives make local governments in the Philippines more transparent? Web Foundation.
- *Cerdan-Infantes, P., & Filmer, D. (2015). Information, knowledge and behavior: Evaluating alternative methods of delivering school information to parents. Washington, DC: World Bank.
- *Cilliers, J., Kasirye, I., Leaver, C., Serneels, P., & Zeitlin, A. (2014). Pay for locally monitored teacher attendance? A welfare analysis for Ugandan primary schools. (Paper submitted to NEUDC)
- Davies, T. (2014). Open data in developing countries: Emerging insights from phase 1. Web Foundation.
- Davies, T., Edwards, D. (2012). Emerging implications of open and linked data for knowledge sharing in development. *IDS Bulletin*, 43(5), 117-127.
- *de Hoyos, R., Ganimian, A. J., & Holland, P. A. (2016). Teaching with the test: Experimental evidence on diagnostic feedback and capacity-building for schools in Argentina. Washington, DC: World Bank.
- *de Hoyos, R., Garcia-Moreno, V. A., & Patrinos, H. A. (2015). The impact of an accountability intervention with diagnostic feedback: Evidence from Mexico. (Policy Research Working Paper No. 7393). Washington, DC: World Bank.
- Demas, A., & Arcia, G. (2015). What matters most for school autonomy and accountability: A framework paper. (SABER Working Paper Series). Washington, DC: World Bank.
- Development Initiatives (DI). (2014). *Lessons from Open Nepal: Year One*. Bristol, UK: Development Initiatives.
- Duflo, E., Dupas, P., & Kremer, M. (2012). School governance, teacher incentives, and pupil-teacher ratios: Experimental evidence from Kenyan primary schools. (Massachusetts Institute of Technology Department of Economics Working Paper Series No. 12-07). Cambridge, MA: MIT.
- *Duflo, E., Hanna, R., & Ryan, S. P. (2012). Incentives work: Getting teachers to come to school. *American Economic Review*, 102(4), 1241-1278.
- *Firpo, S., Ponczek, V., & Possebom, V. (2015). Private education market, information on test scores and tuition practices.
- Fox, J. (2015). Social accountability: What does the evidence really say? *World Development*, 72, 346-361.
- *Galab, S., Jones, C., Latham, M., & Churches, R. (2013). Community-based accountability for school improvement: A case study from rural India. UK: CfBT Education Trust.
- Gaventa, J., & McGee, R. (2013). The impact of transparency and accountability initiatives. *Development Policy Review*, 31(S1), 3-28.
- Gerbase, D.E., Lawry, C., Lux-Lee, S., Palukuri, S.K., Poquette, H., Quan, V.L., & Boehmer, H.M. (2017). Investigations into using data to improve learning: My School Australia case

- study. Washington, DC: Brookings Institution.
- Gigler, B., & Bailur, S. (Eds.). (2014). *Closing the feedback loop: Can technology bridge the accountability gap?*. Washington, DC: World Bank.
- Gill, B., Lerner, J., & Meosky, P. (2016). *Reimagining accountability in K-12 education: A behavioral science perspective*. (HKS Faculty Research Working Paper Series No. 16-018). Cambridge, MA: Harvard University.
- Gurstein, M. (2011). Open data: Empowering the empowered or effective data use for everyone? *First Monday*, 16(2). Retrieved from <http://firstmonday.org/article/view/3316/2764>.
- Hubbard, P. (2007). *Putting the power of transparency in context: Information's role in reducing corruption in Uganda's education sector*. (Working Paper No. 135). Washington, DC: Center for Global Development.
- Janssen, M., Charalabidis, Y., & Zuiderwijk, A. (2012). Benefits, adoption barriers and myths of open data and open government. *Information Systems Management*, 29, 258-268.
- Joshi, A. (2013). Do they work? Assessing the impact of transparency and accountability initiatives in service delivery. *Development Policy Review*, 31(S1), 29-48.
- Joshi, A. (2014). Reading the local context: A causal chain approach to social accountability. *IDS Bulletin*, 45, 23-35.
- Khan, S., & Foti, J. (2015). *Aligning supply and demand for better governance: Open data in the open government partnership*. Open Government Partnership Independent Reporting Mechanism.
- Khemani, S. (2007). *Can information campaigns overcome political obstacles to serving the poor?* (Third Draft). Washington, DC: World Bank.
- Kosack, S., & Fung, A. (2014). Does transparency improve governance?. *Annual Review of Political Science*, 17(65), 65-87.
- *Lassibille, G., Tan, J. P., Jesse, C., & Nguyen, T. V. (2010). *Managing for results in primary education in Madagascar: Evaluating the impact of selected workflow interventions*. World Bank Economic Review, 24(2), 303-329. Oxford University Press.
- *Lepine, A. (2015). *School reputation and school choice in Brazil: A regression discontinuity design*. (Working Paper Series No. 2015-38). São Paulo, Brazil: University of São Paulo.
- *Lieberman, E. S., Posner, D. N., & Tsai, L. L. (2014). Does information lead to more active citizenship? Evidence from an education intervention in rural Kenya. *World Development*, 60, 69-83.
- Lipovsek, V., & Mkumbo, K. (2016). *Where the rubber hits the road: Sub-national conversations and views on education*. Tanzania: Twaweza.
- Lwanga-Ntale, C., Mugambe, B., Sabiti, B., & Nganwa, P. (2014). *Understanding how open data could impact resource allocation for poverty eradication in Kenya and Uganda*. Nairobi, Kenya: Development Initiatives.
- *McMurren, J., Verhulst, S., Young, A., & Sangokoya, D. (2016). *Open education information in Tanzania: A tale of two dashboards*. Open Data's Impact.
- Menocal, A. R., & Sharma, B. (2008). *Joint evaluation of citizens' voice and accountability:*

- Synthesis report. London, UK: DFID.
- *Mizala, A., & Urquiola, M. (2009). School markets: The impact of information approximating schools' effectiveness. (Working Paper No. 239). University of Chile.
- Mullainathan, S., & Shafir, E. (2013). *Scarcity: Why having too little means so much*. New York: Times Books.
- *Muralidharan, K., & Sundararaman, V. (2010). The impact of diagnostic feedback to teachers on student learning: Experimental evidence from India. *The Economic Journal*, 120, 187-203.
- O'Meally, S. C. (2013). *Mapping context for social accountability: A resource paper*. Washington, DC: World Bank.
- Open Rights Group. (2014). *Open data and privacy primer*. (Prepared for the ODP workshop, June 2014). www.openrightsgroup.org/ourwork/reports/open-data-and-privacy-primer.
- *Pandey, P., Goyal, S., & Sundararaman, V. (2011). Does information improve school accountability? Results of a large randomized trial. (Discussion Paper Series No. 49). Washington, DC: World Bank.
- Pritchett, L. (2015). *Creating education systems coherent for learning outcomes: making the transition from schooling to learning* (Working Paper 15/005). Washington, DC: Research on Improving Systems of Education (RISE).
- Read, L., and Manuelyan Atinc, T. (2017). *Investigations into using data to improve learning: Philippines case study*. Washington, DC: Brookings Institution.
- *Reinikka, R., & Svensson, J. (2011). The power of information in public services: Evidence from education in Uganda. *Journal of Public Economics*, 95, 956-966.
- Results for Development Institute. (2015). *Bringing learning to light: The role of citizen-led assessments in shifting the education agenda*. Washington, DC: Results for Development.
- Ringold, D., Holla, A., Koziol, M., & Srinivasan, S. (2012). *Citizens and service delivery: Assessing the use of social accountability approaches in the human development sectors*. Washington, DC: World Bank.
- Sabiti, B. (2014). *Joined-up data Uganda: Improving district-level data for development*. Kampala, Uganda: Development Initiatives.
- Sandefur, J. (2016). *The case for global standardized testing*. Center for Global Development. Retrieved from <http://www.cgdev.org/blog/case-globalstandardized-testing>.
- Sandefur, J., & Glassman, A. (2015). The political economy of bad data: Evidence from African survey and administrative statistics. *The Journal of Development Studies*, 51(2), 116-132.
- *Shkabatur, J. (2012). *Check My School: A case study on citizens' monitoring of the education sector in the Philippines*. Washington, DC: World Bank.
- *Taut, S., Cortes, F., Sebastian, C., & Preiss, D. (2009). Evaluating school and parent reports of the national student achievement testing system (SIMCE) in Chile: Access, comprehension, and use. *Evaluation and Program Planning*, 32, 129- 137.
- Ubaldi, B. (2013). *Open government data: Towards empirical analysis of open government data initiatives*. (OECD Working Papers on Public Governance No. 22). OECD Publishing.

- United Nations (UN). (2015). World Public Sector Report 2015: Responsive and accountable public governance. New York, NY: United Nations.
- United Nations Development Programme (UNDP). (2013). Reflections on social accountability: Catalyzing democratic governance to accelerate progress towards the Millennium Development Goals. New York, NY: UNDP.
- Uwezo (2015). Are our children learning? The state of education in Kenya in 2015 and beyond. Nairobi: Twaweza East Africa.
- van Schalkwyk, F., Willmers, M., & Schonwetter, T. (2015). Embedding open data practice: Developing indicators on the institutionalization of open data practice in two African governments. Cape Town, SA: University of Cape Town Intellectual Property Unit.
- Verhulst, S., & Young, A. (2016). When demand and supply meet: Key findings of the Open Data Impact case studies. New York, NY: GovLab.
- Westhorp, G., Walker, B., Rogers, P., Overbeeke, N., Ball, D., & Brice, G. (2014). Enhancing community accountability, empowerment and education outcomes in low and middle-income countries: A realist review. London, UK: EPPI-Centre, University of London.
- Wetterberg, A., Brinkerhoff, D. W., & Hertz, J. C. (2016). Governance and service delivery: Practical applications of social accountability across sectors. Research Triangle Park, NC: RTI International.
- *Wild, L., & Harris, D. (2011). The political economy of community scorecards in Malawi. London, UK: Overseas Development Institute.
- Woessmann, Ludger. (2016). The importance of school systems: Evidence from international differences in student achievement. *Journal of Economic Perspectives*, 30(3), 3-32.
- World Bank. (2016a). Making politics work for development: Harnessing transparency and citizen engagement. Policy Research Report. Washington, DC: World Bank.
- World Bank. (2016b). World development report 2016: Digital dividends. Washington, DC: World Bank.
- *World Bank. (2011). An impact evaluation of Sri Lanka's policies to improve the performance of schools and primary school students through its School Improvement and School Report Card programs. (Discussion Paper Series No. 35). Washington, DC: World Bank.
- World Bank. (2003). World development report 2004: Making services work for poor people. Washington, DC: World Bank.
- *Young, A., & Verhulst, S. (2016). Mexico's Mejora Tu Escuela: Empowering citizens to make data-driven decisions about education. Open Data's Impact

Appendix: Case Study Initiatives

Scoala Mea

A social accountability project launched in **Moldova** by the Expert-Grup, a local think tank, with support from the World Bank's Global Partnership for Social Accountability (GPSA). The overall objective of the five-year initiative, Empowered Citizens Enhancing

Accountability of the Education Reform and Quality of Education in Moldova, is to empower Moldovan citizens through their inclusion in the monitoring of school-level inputs and budget allocations. The initiative provides parents and the general public information on key parameters of the school (class-size, student-teacher ratio, number of students and teachers, qualifications of teaching staff), school budgets and spending, as well as the school exam results, including comparisons to regional and country averages.

My School

An online platform in **Australia** with the objective of enabling the collation and publication of data about nearly 10,000 schools across the country, effectively offering a report card for each school. The website provides three categories of data: operational context, finances and resources, and student performance. An important element of My School is the Index of Community Socio-Education Advantage (ICSEA), which allows comparisons of similar schools based on socio-educational advantage and prevents the creation of non-contextual ranking tables.

Check My School

Check My School (CMS) was established by the Affiliated Network for Social Accountability in East Asia and the Pacific (ANSA-EAP) with the aim to help improve service delivery in public education in **the Philippines** through the collection and dissemination of information on local school conditions online and in schools. Community volunteers act as third-party monitors that collect and validate information on school characteristics and inputs, filling data gaps and calling attention to any discrepancies with government-collected data.

Khyber Pakhtunkhwa (KP) Independent Monitoring Unit and Punjab Programme Monitoring and Implementation Unit

Government-led independent data collection and monitoring units in **Pakistan** that track key education indicators and disseminate results through online platforms accessible to researchers, journalists, and the general public. Data collection occurs monthly and captures information on teacher and student attendance, retention rates, infrastructure, and management