

SPOTLIGHT 6

Spending more or spending better—or both?

Good teachers, conducive learning environments, reliable assessment systems, and innovative learning technologies all cost money. And as more students progress further in school, financing needs will rise. Yet more funding leads to better learning only if it is used well, with an intentional focus on learning outcomes.

Patterns of public education spending

Decisions over how to allocate public spending inevitably require difficult trade-offs. When deciding how to spend scarce resources, governments have to weigh the costs and benefits of different spending decisions, both of which are typically estimated with large margins of error. Governments also have to weigh the short- and long-term benefits of different spending choices. Should they spend more on urban infrastructure improvements to reduce air pollution in the future, or should they invest today in better primary health care services to treat respiratory infections?

Spending on education is subject to this same calculus. Education's many potential benefits for both individuals and societies (see chapter 1) make it a strong candidate for public support. In fact, the obligation to provide equitable education is often enshrined in law. Although the high returns to education mean that many students are willing to bear the costs themselves, there are strong rationales for public financing of at least some parts of the education system. First, a concern for fairness induces countries to subsidize education for children and youth from the poorest households, because their families may be unable or unwilling to finance their education. Second, because education has positive spillovers for others—such as when it reduces the propensity to commit crime—individuals may underinvest in their own education, from society's perspective. Third, governments want

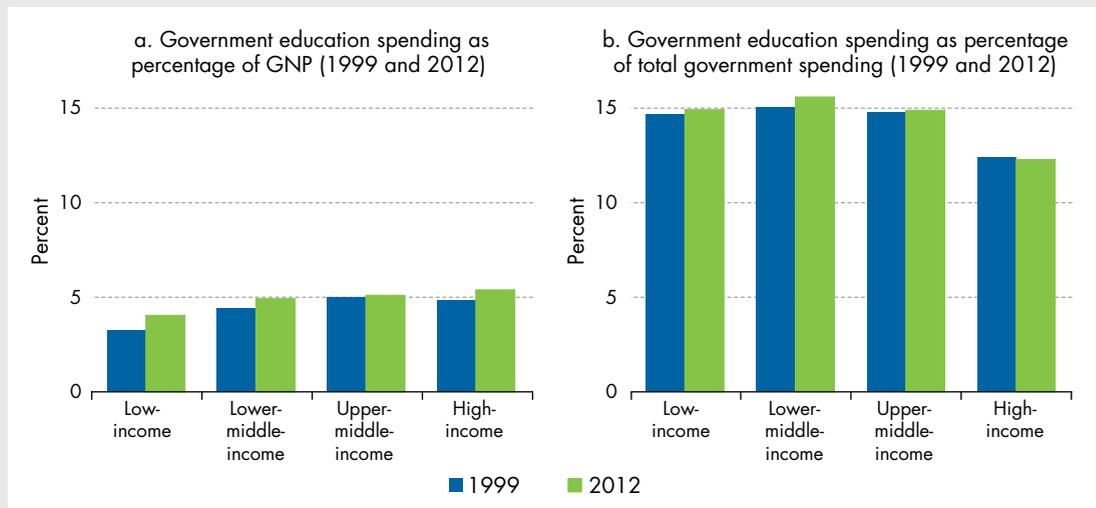
to use education to create shared values; delivering education directly, or at least financing it, gives them leverage to ensure this happens. But in all these cases, governments must weigh benefits against the costs of investing in education rather than in some other area—and they must decide how to spend within the education sector.

As their spending patterns show, countries are increasingly willing to invest in education. Whether because of the public economics calculations just discussed or for other political reasons, countries have devoted a rising share of their national income to education (figure S6.1). In 2012 about two-thirds of countries that reported information on spending devoted over 4 percent of national income to public spending on education. Education also typically absorbs the largest single share of a government's budget, averaging about 15 percent of the budget across low- and middle-income countries. In some countries, the investment in education is still low, indicating scope for further prioritization, but the aggregate trends suggest that governments recognize the importance of education.

Does more spending improve learning outcomes?

While there is a strong rationale for public investment in education, the relationship between spending and learning outcomes is often weak. In global learning assessments, for example, although higher per-student spending initially appears to lead to more

Figure S6.1 Governments devote a large share of their budgets to education



Source: UNESCO (2015). Data at http://bit.do/WDR2018-Fig_S6-1.

Note: Median values are shown. GNP = gross national product.

learning at the poorer end of the global income scale, the correlation largely disappears once controlling for countries' per capita income. This finding suggests that the correlation is driven more by economic development than by the level of public spending.¹

Regional learning assessments—which include many more low- and lower-middle-income countries—also show how inconsistent the association between spending and learning can be. For example, public spending per primary school student increased over the 2000s in both Kenya and Lesotho; yet student learning outcomes improved in Lesotho but declined in Kenya (figure S6.2, panels a and b). Guatemala improved student learning significantly between 2006 and 2013, even though per-student spending declined over the same period (figure S6.2, panels c and d). Comparing across regions within a country often reveals similar patterns. In Indonesia during the 2000s, the link between changes in district education spending and secondary school examination results was very weak.² These findings indicate that education systems, and even schools within the same system, vary in their ability to translate increased spending into better learning outcomes.

Providing more resources directly to schools has also had mixed effects on learning in different environments. A review of two decades of research reveals that the association between many school-level resources (such as textbooks) and student outcomes is variable.³ School grants have become

a commonly used mechanism in many countries to provide schools with the resources needed to support school improvement. Although grants have often increased student enrollment and retention, they have had relatively limited effects on learning. For example, recent evaluations in Indonesia and Tanzania found that school grants alone did not increase student learning.⁴

Weak links in the spending-learning chain

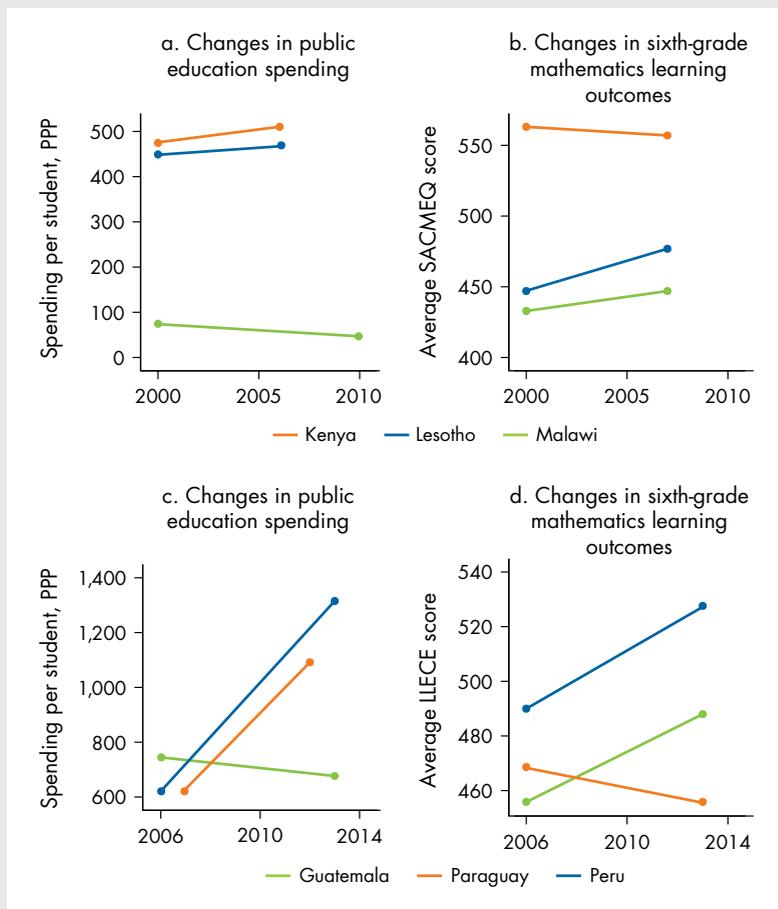
There are five main reasons why spending does not always lead to better and more equal student learning outcomes:⁵

- Spending is not allocated equitably.
- Funds do not reach schools or are not used for their intended purposes.
- Public spending can substitute for private spending.
- Decisions on the use of public funding are not coherently aligned with learning.
- Government agencies lack the capacity to use funding effectively.

Public spending is often allocated in ways that exclude poor and marginalized children, reducing its overall impact on learning. Overall, public education expenditure tends to favor wealthier, more powerful groups (table S6.1). Poorer households do tend to

Figure S6.2 The relationship between changes in public education spending and student learning is often weak

Changes in public education spending and in sixth-grade mathematics learning outcomes, selected countries



Sources: WDR 2018 team, using data from UIS (2016) for spending and from World Bank (2017) for student learning. Data at http://bit.do/WDR2018-Fig_S6-2.

Note: Per student spending is reported in purchasing power parity (PPP) U.S. dollars. Student learning data are derived from data collected by the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) and the Latin American Laboratory for Assessment of the Quality of Education (LLECE). For each country, the two plotted data points reflect the years for which data are available.

receive a greater share of public spending on primary education because they tend to have more children than wealthier households. But public spending on secondary and tertiary education overwhelmingly favors wealthier groups, because by the time students reach those levels, many of the poor have already left school. In Zambia, 39 percent of secondary education spending was allocated to the richest fifth of households, compared with only 8 percent for the poorest. The gap is even wider at the tertiary level, where 86 percent of all public spending is captured by the richest households. These estimates likely understate the

differences across socioeconomic groups, since they typically do not account for the fact that students from poorer families tend to receive lower-quality schooling than those from wealthier families. Allocating resources more equitably could therefore raise average learning levels.

Public funds sometimes fail to reach schools or are not used as intended. In 2013–14, almost a third of school capitation grants failed to reach Zambian primary schools.⁶ In the Philippines, in 2013 about a quarter of similar funds did not reach primary and lower secondary schools.⁷ In Zambia, funds were diverted

Table S6.1 Inequalities in public education spending are common

Incidence of public education spending by household income quintile, selected countries and years

Percent

Country	Year(s)	Primary		Secondary		Tertiary		Total	
		Poorest	Richest	Poorest	Richest	Poorest	Richest	Poorest	Richest
Bangladesh	2010	27	13	13	23	2	55	20	20
Burundi	2006	23	13	12	27	4	59	15	29
Congo, Rep.	2011	21	16	18	18	1	62	—	—
Ghana	2007	19	13	13	20	4	65	12	34
Honduras	2004	31	6	5	20	1	67	—	—
Indonesia	2007	26	11	15	19	4	57	20	23
Pakistan	2007–08	25	11	16	23	9	55	17	28
Thailand	2011	25	14	—	—	1	73	20	26
Uganda	2009–10	19	15	6	38	1	68	—	—
Zambia	2010	22	14	8	39	0	86	15	31

Sources: Bangladesh: World Bank (2013a); Burundi: Tsimpo and Wodon (2014); the Republic of Congo: World Bank (2014); Ghana: Wodon (2012); Honduras: Gillingham, Newhouse, and Yackovlev (2008); Indonesia: Wika and Widodo (2012); Pakistan: Asghar and Zahra (2012); Thailand: Buracom (2016); Uganda: Guloba (2011); Zambia: World Bank (2016b).

Note: Poorest (richest) refers to the poorest (richest) 20 percent of households. Estimates for secondary in Ghana and the Republic of Congo are for lower secondary. Primary estimates for Thailand also include secondary. — = data not available.

for other uses, including to fund district-level operating costs. In the Philippines, while district education offices reported using some of the funds to pay school expenses, this use was not recorded and schools had no way of monitoring the spending. Schools in the Philippines that served poorer students also received a smaller share of their intended allocation than schools serving wealthier students.⁸ Even when resources are delivered to schools, they are sometimes not used. In Sierra Leone, a 2008 program successfully increased the delivery of textbooks to schools, but the textbooks had no impact on learning because they were stored as a hedge against future shortfalls rather than distributed to students.⁹

Household spending can also affect the link between public spending and outcomes. Taking account of household spending on education can alter the picture of overall spending across countries. Government expenditure as a proportion of gross domestic product (GDP) in Nepal is much lower than in Vietnam. However, when all public and private spending on education is taken into account, spending in Nepal is much higher.¹⁰ Households can also react to increases in public education spending by lowering their own contributions. For example, the introduction of school grants in India and Zambia had no effect on learning

because parents reduced their own financial support in anticipation of increased government funding.¹¹

Decisions on how to use public resources often lack coherent alignment with learning. The evidence on ways to improve learning is growing, suggesting ways to use funding more effectively. Also important is ensuring that the mix of inputs and interventions that are funded work together well. Many education systems find this difficult. For example, more classrooms may be built, but there are insufficient funds to hire the teachers needed to use them. Teachers are present in classrooms, but they lack the learning materials needed to teach effectively. Improving coherence is not just about the mix of inputs, but also about the systems that manage these inputs. In Tanzania, grants given to schools were ineffective on their own, but combining grants with teacher incentives ensured the grants were used effectively to improve student learning.¹² In Indonesia, school grants improved learning only when they were combined with measures to link school committees with village authorities.¹³

The government agencies responsible for managing education often lack the capacity to use resources effectively. The Philippines recently embarked on an ambitious education reform backed up with significant increases in

public investment. A central element of the program is the introduction of two additional years of secondary education, which in turn requires the rehabilitation and expansion of school infrastructure to provide the places needed for senior high school. Despite a 19-fold increase in the infrastructure budget between 2005 and 2015, lack of government capacity to manage such a massive school building program has meant that a large share of the resources remained unspent. In 2014 only 64 percent of the infrastructure budget was committed. And even where classrooms were built, school principals have been largely unsatisfied with their quality.¹⁴

Spending to improve learning

Achieving education goals, whether national or global, will certainly require more spending in the coming decades. The Education Commission estimates that low- and middle-income countries will have to increase spending by 117 percent between 2015 and 2030 to enable most children to complete primary and secondary education with minimum levels of learning, as the Sustainable Development Goals call for.¹⁵ Reliably estimating such global costs is difficult because doing so requires accurate information on many aspects of country systems that is often unavailable. It also requires making assumptions—for example, about optimal class size—that, while valid for some countries, may not apply to others. Notwithstanding these difficulties, exercises of this kind offer useful information on what school expansion of reasonable quality might cost. That information indicates that, even with greater efficiencies, it will be impossible to extend schooling for hundreds of millions of students without investing more in education.

The key will be to use those additional resources in ways that improve learning, especially for disadvantaged children. Costing exercises are sometimes misinterpreted as implying that more spending is all that is needed. But because there is no certainty that spending will lead to better outcomes, spending better will also be essential—as the Education Commission emphasizes. When education is funded using resources diverted from other pressing public needs such as health or infrastructure, or funded through debt to be repaid by the next generation, it is crucial that spending be oriented toward what will improve learning for all. How to achieve this is the focus of this *World Development Report*.

Spending more can be an important first step to spending better, but, again, increasing spending alone is not sufficient to improve learning. The politics of education reform sometimes requires compensating stakeholders who might lose out, or spending more to lay the foundations for future reform. For example, addressing the low pay of teachers in Peru was an important prerequisite for introducing the reforms (such as linking teacher career paths to performance) that underpinned improvements in learning outcomes.¹⁶ However, in other cases strategies of this kind have worked less well. A 2006 education finance law in Argentina aimed at reversing declines in quality led to a near-doubling of education spending as a share of GDP (from 3.5 to 6 percent) between 2005 and 2013. The new resources were used to increase teacher hiring, raise teacher pay, and improve school infrastructure. Yet despite these improvements in inputs, learning outcomes have improved only marginally in recent years and are still below 2003 levels.¹⁷ These experiences highlight the need to strengthen the links in the spending-learning chain, if more spending is to lead to better learning outcomes.

Notes

1. See chapter 9 and Altinok (2010).
2. World Bank (2013b).
3. Glewwe and others (2011).
4. Mbiti, Muralidharan, and Schipper (2016); Pradhan and others (2014).
5. See Filmer, Hammer, and Pritchett (2000) for a similar analysis of health spending.
6. World Bank (2016c).
7. World Bank (2016a).
8. See Policy Note 5, figure 8 in World Bank (2016a).
9. Sabarwal, Evans, and Marshak (2014).
10. UIS (2016).
11. Das and others (2013). This may be beneficial if it reduces financial burdens on parents, but that was not the primary purpose of these grants.
12. Mbiti, Muralidharan, and Schipper (2016).
13. Pradhan and others (2014).
14. World Bank (2016a).
15. This includes only projected costs of primary and secondary education. See Education Commission (2016, table 3).
16. Bruns and Schneider (2016).
17. de Hoyos, Holland, and Troiano (2015).

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