Teacher absenteeism, improving learning, and financial incentives for teachers

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Abstract We know that learning is in crisis. We know that teachers are key to addressing the crisis. Yet, the significant investments in supporting teachers to improve learning have not enabled improved learning outcomes. This article examines a key reason for this: teacher absenteeism. Poor teacher motivation is highlighted as an explanation for teacher absenteeism, with poor remuneration emerging as teachers’ main reason for not attending school and/or class. This article explores the use of financial incentives, which have been sidelined within the education aid architecture, to improve teacher motivation, address teacher absenteeism, and improve learning. It distils the successes and lessons learned from the research literature, which can be used to devise a framework to guide financial-incentive-focused strategies. The framework is currently informing a research-based intervention in schools in Uganda that is using a cost-effective mobile-phone-based and teacher-motivation-focused strategy and tools to improve learning.

Keywords Teaching and Learning · Financial Incentives · Teacher absenteeism · Mobile phone-based learning · Uganda

Nine out of 10 children are not learning (World Bank, 2019). Beeharry (2021) used this statistic to introduce his highly regarded paper appealing to the global education aid community to prioritize foundational literacy and numeracy (FLN) in using education aid funding. Girindre’s (2021) paper led to an excellent set of 20 reflection pieces presented at a Centre Global for Development (CGD) symposium on May 19, 2021 (Hares & Sandefur, 2021). When reading these reflection pieces, I was struck by the dearth of focus on teachers, who are the frontline workers in the war against learning poverty. Only three of the papers mentioned teachers (Baron, 2021; McClean, 2021; Schipper et al., 2021). In light of teachers’ critical role in improving learning, in particular FLN, this is a concern. It also
does not reflect the renewed focus, during Covid-19, on the role of teachers and the various interventions that emerged to support teachers—in particular, building teacher capacity (Burns, 2021). Almost every initiative and intervention in recent years has incorporated teacher education, which has increasingly focused on realizing the improved teachers’ pedagogical practices that research has found to best enable children’s learning to improve (Evans & Acosta, 2021; Snilstveit et al., 2015). “Developing countries spend many millions annually” (World Bank, 2018, p. 131), yet learning is still in crisis.

In this article, I focus on two areas, which I call the “elephants in the classroom”, related to teachers and improving learning: teacher absenteeism and its detrimental impact on learning poverty, and motivational financial performance incentives for teachers. These will be explored through a presentation of the evidence and on the research and experience informing an intervention in Uganda that seeks to address these elephants in the classroom and ultimately improve learning outcomes much more cost effectively and sustainably than many of the current modalities being used within our education aid architecture. The research-based intervention is using a cost-effective mobile-phone-based and teacher-motivation-focused strategy and tools to improve learning. Currently, the mobile-phone-based tools for the intervention are being devised. For the purposes of this article and the intervention, learning encompasses foundational literacy and numeracy (FLN) and 21st-century learning skills.

The article is in several parts. After this introduction, it examines the overwhelming evidence on what works best in improving learning—namely, pedagogy and how best to support teachers to implement proven best-practice pedagogies (Education Commission, 2020; Evans & Acosta, 2021; Snilstveit et al., 2015). For the purposes of this article, pedagogy is the observable act of teaching, together with its attendant discourse on educational theories, values, evidence, and justifications (Alexander, 2009). I then explore the elephant in the classroom (i.e., teacher absenteeism) by examining the extent of the issue, its strong relationship with teacher motivation, and efforts to address it. The use of motivational financial performance incentives emerges as a potentially universally effective approach to addressing teacher absenteeism and ultimately improving learning. I review the literature and studies, whose results were mixed, of teacher motivational financial performance incentives interventions in developing countries. In light of the sidelong of teacher incentive approaches within the education aid architecture, I was surprised to find many examples of successes with the approach, even in those studies deemed unsuccessful, in improving learning and addressing teacher absenteeism. I purport that the small-scale nature of most of the interventions, as well as the seemingly myriad of issues emerging, even in those that were successful, is one explanation for the sidelong of the approach. I call for a reexamination of the approach to, at a minimum, raise it within the education aid architecture as a potentially effective approach—to not “throw the baby out with the bathwater”.

This leads into the next section of the article, a further analysis of the studies to distill best practices and lessons, which have been collated into a framework of six areas to guide and inform financial incentive interventions going forward. I present one such intervention in Uganda, with a framework as well as a change theory related to the humanity of teachers (Fullan, 1991) informing it. The research-based intervention involves three phases and is currently in the first phase. The intervention seeks to demonstrate that it is more cost-effective to use funding to financially incentivize teachers to ultimately improve learning outcomes than to use business-as-usual strategies (e.g., the newly emerging digital and innovative strategies), which fail to take teacher agency and their humanity into account. In conclusion, the article supports Girindre’s (2021) call for the prioritization of teachers in
funding allocation decisions. Such prioritization would enable a focus on FLN, taking into account the humanity of teachers and addressing their levels of motivation.

**Teachers and pedagogy proven to improve learning**

Research definitively demonstrates that the highest aid strategy returns are pedagogy and teacher focused (i.e., what goes on in classrooms and what goes on between teachers and learners), using the various out-of-school interventions that emerged during Covid-19 school closures. The evidence is overwhelming that teachers are key to improving the quality of education and ultimately learning. And key to teachers improving learning is best practice pedagogy (Education Commission, 2020; Evans & Popova, 2016; Education Commission, 2018; World Bank, 2018). Snilstveit et al.’s (2015) definitive analysis of research from 78,000 papers, as well as Evans and Acosta’s (2021) analysis of 145 empirical studies from 2014 onward (within which 64% were government-implemented programs), highlighted pedagogy interventions as critical to improving learning.

Programs seeking to improve pedagogy had an impact greater than the equivalent of an extra half year of business-as-usual schooling and also had an 8% increase in the present discounted value of lifetime earnings (Evans & Yuan, 2017). In the United States, students with great teachers advance 1.5 grade levels or more in one school year, compared with just 0.5 grade levels for those with ineffective teachers (Hanushek, 1992; Rockoff, 2004). Shanghai topped Programme for International Student Assessment (PISA), thanks to policies that ensured every classroom had a prepared, supported, and motivated teacher (Liang et al., 2016). Hence, the focus within the education aid architecture should be placed on developing teacher capacity.

Almost every initiative and intervention in recent years has incorporated teacher professional development that seeks to realize improved pedagogical practices and ultimately children’s learning. A survey of in-service teacher training in 38 countries found that 91% of teachers had participated in the previous 12 months (Strizek et al., 2014). Two out of three World Bank projects with an education component in the last decade incorporated teacher professional development. UNICEF also supports teacher professional development in most of its 193 country offices and is currently carrying out research into the effectiveness of its annual investment in teacher education and training.

We also know from evidence what works best in teacher professional development to ultimately improve learning. It is most effective when it (a) targets teachers’ capacity gaps; (b) is aligned with practices associated with better student performance, often around specific pedagogical techniques (e.g., focused on FLN); and (c) includes follow-up coaching, as one-off workshops rarely bring about a change in practices. Practicality, specificity, and continuity are key to effective professional development (Conn, 2017; Darling-Hammond, et al. 2009; Popova et al., 2016, 2017, 2018; Walter & Briggs, 2012; Yoon et al., 2007; Zhang et al., 2016). Related to specificity, research has found that focusing on just one new pedagogical technique at a time and providing teachers with explicit guidance are supportive. “For effective teacher training, design it to be individually targeted and repeated, with follow-up coaching—often around a specific pedagogical technique” (World Bank, 2018, p. 18).

However, the huge investments in teacher education—both financial and human, often seeking to bring about large-scale sustained improvements—have little to show for them (Popova et al., 2018). The returns are, at best, minimal and are mostly project/intervention
dependent. The literature is littered with the failures of innumerable teacher education projects.

Is there another way to support teachers within government systems that is more cost-effective and sustainable, leads to implementation of what teachers learn, and improves students’ learning? The Power Teachers motivation-focused intervention, to be implemented in Uganda in 2022, seeks to provide another way. The intervention’s name, Power Teachers, reflects the focus of this intervention on teachers themselves and on putting power into their hands to bring about improved learning. It is informed by research, lessons learned, experience, and partnership. It begins with the elephant in the classroom: teacher absenteeism.

The elephant in the classroom: Teacher absenteeism

Amidst all the business-as-usual strategies within the current education aid architecture (e.g., teacher professional development, development of policies and curricula, advocacy campaigns, capacity building, and commissioning research and think pieces) that seek to improve teacher capacity and children’s learning, is the elephant in the classroom: teacher absenteeism. We can devise more reforms, innovations, and business-as-usual interventions to improve quality and learning; however, if teachers are not in school—or when in school, not in class teaching—failure is inevitable. Teachers’ skills do nothing for learning unless teachers choose to apply them in the classroom (World Bank, 2018, p. 22).

UNICEF Innocenti’s (2020) recently published study on teacher absenteeism in 19 countries in Eastern and Southern Africa found teacher absenteeism rates ranging from 15% to 45%. This is a crisis issue, yet these findings, which reflect findings from earlier studies, have not received significant attention. The study examined factors affecting the various forms of teacher attendance, which include being at school, being punctual, being in the classroom, and teaching when in the classroom. Teacher absenteeism and reduced time on task wastes valuable financial resources, shortchanges students, and is one of the most cumbersome obstacles to improving learning.

An earlier study in seven African countries found that, on average, primary students received less than 2.5 hours of teaching per day, less than half the intended instructional time (Education Commission, 2018). This does not take into account the quality of the instructional time and whether it enabled children’s learning. Across seven African countries, more than one in five teachers (23%) were absent from schools on unannounced visits by survey teams, with only 55% in classrooms and 45% actually teaching in classrooms (Bold et al., 2017; Figure 1).

The World Development Report (World Bank, 2018) collated evidence from countries globally and highlighted that the situation in Africa (Bold et al., 2017) is also reflected in countries in South America, South Asia, and the Middle East (Figure 2).

Anecdotal evidence and unpublished evidence also reflect these findings. These include donor and civil society reports and Ministry of Education and Sports (MoES) monitoring reports. For example, Uganda’s annual Sector Wide Approaches (SWAP) monitoring, which has taken place annually since 2008, found rates of teacher absenteeism between 17% and 30%. Moreover, not only were teachers absent, but head teacher absenteeism was also a major issue and was believed to encourage teacher absenteeism.

With teachers’ pay comprising at least 80% of recurrent budgets in most countries, this is a leading cause of inefficiency and wastage (Bold et al., 2017; Figure 3).
Muralidharan et al. (2017) calculated the fiscal cost of teacher absenteeism at $1.5 billion each year in India and Uganda. Muralidharan revisited the rural villages in Uganda and India surveyed by Chaudhery et al. (2006) and found only a modest reduction in teacher absenteeism, from 26.3% to 23.7%, on average. In 2006, Uganda’s rate was 26%, and India’s 19%.
A number of reasons can explain this systemic teacher absenteeism. The most often cited reasons include poor accountability of managers and inspectors, illness, and poor working and living conditions of teachers. The lack of focus from governments, donors, and the various platforms within the education aid architecture must also be considered factors. A key and overarching factor in teacher absenteeism is the disconnect between the demands of the profession and systemic support to teachers to meet these demands. Teachers are expected to perform as professionals, but the education systems fail to treat them as such or to provide a professional culture for them. Pay, respect, and working conditions are poor and have declined over the last few decades (World Bank, 2018). Systems still want more from teachers, especially during the ongoing Covid-19 pandemic, but teachers also deserve and want more from the systems that employ them (Evans & Yuan, 2017; World Bank, 2018). Many teachers in Africa have to deal on a daily basis with large classes; long working hours, including sometimes double shifts; duties outside classrooms; poor housing; lack of school infrastructure and equipment; hungry children, lack of parental engagement; and a salary that is inadequate to support their families, often requiring teachers to take on other work to supplement their salaries. Yet they are expected to implement many innovations, new curriculum reforms, and employ new pedagogies. Covid-19 added further demands on these teachers.

Agnes, a teacher in rural Eastern Uganda, encapsulates the challenges faced by many teachers in low-income countries. Agnes has been teaching lower primary classes in a small rural school for 13 years, working in very difficult conditions and only able to afford poor living conditions in a shared house 5 km from the school. She is a qualified teacher and attends in-service teacher training a few times a year. “The government expects us to use new methods, but they don’t support us or appreciate us. Just look at our poor salary, I can barely feed my children on the salary”. She explained that she and many of her colleagues feel demoralized, with some of them regularly absent from school as a result [meeting with author, February 2019].

Teachers’ general feelings of dissatisfaction affect their attendance at work. Ejere (2010) termed this absenteeism a “repulsive strategy”, which teachers use to respond to their difficult conditions and marginalization in schools. A TISSA study of teachers in Uganda in 2013 supported this. The study highlighted the key reason for teacher absenteeism as

![Figure 3: The gains to be had from efficiency](image-url)
poor teacher motivation. The TISSA study found that most teachers (84%) indicated they would like to leave the profession within 2 years; 59% indicated that if they were to start their career again, they would not choose teaching. Bennett and Akeampong’s (2007) notable 12-country case study research into teacher motivation highlighted what they termed a “teacher motivation crisis”; a sizeable number of the millions of primary teachers in the 12 countries had low levels of job satisfaction and were poorly motivated, leading to “many tens of millions of children not being taught properly and are not receiving even a minimally acceptable education” (p. viii).

We still have a teacher motivation crisis; however, it is not receiving the attention it deserves, especially in light of the critical role of teachers in improving learning. More recently, Evans and Yuan’s (2018) work on teachers’ working conditions further highlighted the huge issues with poor teacher motivation. They used Maslow’s hierarchy of needs to present issues effecting teacher motivation and found that, for teachers in developing countries, physiological and safety needs were significant. These needs included compensation, living conditions, workload, work environment, and fundamental preparation.

Compensation and teachers’ pay have emerged in many studies as a critical factors in poor teacher motivation (Bennett & Akeampong, 2007; Evans & Yuan, 2018; TISSA, 2013). Bennett and Akeampong’s (2007) found that poor teacher salaries “more than anything else, is the key factor undermining teacher morale and motivation” (p. viii). This has led to a number of interventions that seek to use motivational financial performance incentives to improve teacher motivation, address teacher absenteeism; and ultimately, improve teacher performance and learning outcomes.

**Motivational financial performance incentives**

Efforts have been made in developing countries to address teacher absenteeism, mostly focused on strengthening accountability systems, and in recent years, also on piloting the provision of teacher housing, additional pay for teachers in hard-to-reach areas, provision of in-service education and training, automated salary systems direct to teachers’ bank accounts, and timely monthly salary payments. Unfortunately, none have had a sustained impact on decreasing absenteeism and improving teacher performance and children’s learning.

On a positive note, another intervention, motivational financial performance incentives—both to reduce absenteeism and to improve learning outcomes—has had some success in developing countries, unlike results in developed countries, which were not positive. For example, in the United States, Fryer (2011) and Goodman and Turner (2010) in New York and Springer (2010) in Tennessee found no improvement in test scores when motivational financial performance incentives for teachers were piloted. In developing countries, three studies reviewed by Snilstveit et al. (2015) found the positive effects of decreasing absenteeism and improving learning.

Successful financial performance incentive interventions in developing countries include a 30-month intervention in 57 non-formal education centers in India, which found that motivational financial performance incentives led to absenteeism decreasing from 44% to 19%, and students scoring higher on tests at the end of the program. It was also demonstrated to be cost-effective, at a total cost of $6 per child, and the cost of increasing test scores by 0.1 standard deviation was only $3.58 (Duflo et al., 2012). Another successful intervention took place in 300 schools in four districts over 5 years in Andhra Pradesh (Muralidharan, 2011). The intervention was guided by four Ps: presence, preparation,
pedagogy, and performance. The impact on improved learning in mathematics and language was much larger than the effects found for most other interventions in developing countries. Of particular interest was the finding that students also performed better in core subjects, which were not the initial focus of the study—specifically, science and social studies. The study highlighted that teacher’s performance bonus pay motivated them to pay special attention to weaker children, provide and correct homework, conduct extra classes after school, and use methods other than rote learning.

In Rwanda, a novel experimental design separated the impact of performance pay on recruitment and on effort and found favorable effects on both, with a significant net increase in student test scores (Leaver et al., 2015, 2019; Zeitlin et al., 2017). Popova et al. (2018) found that linking salary and incentives was the most effective design for professional development. In Tanzania, researchers tested two alternative financial incentive designs—one was a pay-for-percentile system in which a teacher’s bonus was based on students’ ranks against other students with similar baseline scores; in the other program, a teacher’s bonus was based on students achieving benchmark proficiency levels, which the authors argued was easier to implement and gave teachers clearer targets. Both designs boosted test scores, but the latter program had larger impacts at a lower cost (Mbiti et al., 2019b).

Other studies on financial performance incentive to improve teacher motivation in developing countries had mixed results (Evans & Acosta, 2021). For example, a pay-for-performance program in Uganda had test score impacts only for the subset of students who attended schools that had books (Gilligan et al., 2018). In Kenya, using contracts that were renewable, based on performance, to hire teachers also boosted students’ learning, although an effort to scale up those contracts nationwide did not result in learning gains, potentially due to a combination of political opposition, reduced monitoring, and delayed salaries (Bold et al., 2017). A study in Tanzania found that paying performance-based bonuses to teachers had positive impacts on students’ learning in only one of the two tests administered (Mbiti et al., 2019a). Of note is the finding that teachers supported these programs in Tanzania, both in theory and in practice, reporting higher levels of satisfaction in schools that had performance pay (Mbiti et al., 2019b).

A framework for motivational financial performance incentives for teachers

In light of the many successful teacher financial incentive interventions, as well as the successes within interventions that had mixed findings, I wondered why teacher performance financial incentive approaches have not emerged as an accepted, and at least potentially effective, approach within the education aid architecture’s approaches and strategies. I purposed that the small-scale nature of most of the interventions, as well as their focus on the issues emerging even in those interventions that were successful, is one explanation for this. I also questioned the extent to which the failure of interventions to take on board lessons learned from issues in studies, as well as best practices that emerged, has led to this sidelining of motivational financial performance incentives for teachers.

Upon further analysis of the best practices and the lessons learned from the interventions, I found that many were similar across interventions, and I used these to develop a framework to guide a teacher financial performance incentive intervention in Uganda. The framework can usefully inform other interventions involving motivational financial...
It is hoped that it will also spark reflection and debate within the education aid architecture community and with country government officials responsible for improving education quality and learning—in other words, debate that focuses especially on the capacity of teacher financial incentive strategies to address teacher absenteeism, develop teacher capacity, and ultimately improve learning outcomes.

The framework presented in Figure 4 distills the best practices and lessons learned into six main areas. Some of the lessons learned are relevant to more than one of the six areas; however, for the purposes of this article, they are presented in the area in which they have most impact. It needs to be noted that my own decades’ long experience working with teachers in low-income countries, as well as many colleagues within her professional network globally with similar experience, also informed the framework and indicated that financial performance incentive approaches, especially in light of the ongoing highlighting of teacher compensation as a key motivational factor, needs more attention and focus.

**Metrics and measurement systems and tools**

All the interventions reviewed highlighted issues with the systems and tools used to track teachers’ attendance and assess learning—in particular, related to tool robustness, cost, and reliance on a large number of personnel to support and manage it. For example, the NGO

![Figure 4](image-url)
implementing the non-formal education project in 57 NFE centers in India used cameras with tamper-proof and time data functions (to prevent corruption) to track teachers’ attendance (Duflo, 2007). A child photographed the teacher with the students at the beginning and end of the school day, the teacher’s salary was based on their attendance, and they were fined for days they missed. However, the project was not found to be replicable as it was too expensive to roll out; was outside the government system; and was subject to other risks, such as camera theft, lack of consistent electricity, inability to capture and save feeds, inconsistent functioning of the cameras, and very labor intensive in the support required of the NGO managing the project. Also, even when teachers were in school, it was difficult to ascertain if they were actually teaching and teaching effectively. Issues related to potential issues about children effectively reporting on their teachers, though not measured in the study, are relevant and must be taken into account in any financial incentive intervention. Children should never report on teachers.

Another education measurement tool, EduTrak, developed in 2012 in Peru and Uganda, used mobile technology to gather education data in remote communities, including data about teachers’ and students’ attendance, timely delivery of school materials, Water, Sanitation and Hygiene (WASH) facilities and use, and school maintenance. Students, teachers, and communities were all involved in data collection. However, from my experience with EduTrak in Uganda, as well as unpublished memos, there were many system and tool issues—for example, issues with the timing of automated requests for information (e.g., requests coming during the night and waking participants), with charging the phones, and with the trustworthiness of the data. Significant issues were related to participants’ motivation to use the tool. This is especially related to change theories.

An account of a small-scale teacher financial incentive and attendance project using WhatsApp is more inspiring (Nedungadi et al., 2017). The project involved 19 teachers in educational village centers in Uttarakhand. The project team devised a special app to prevent corruption, to be used on teachers’ cheap smartphones with 2G sim cards. The app had time and date stamped photograph functions. The key issue with this small project, however, was the large human resources needed by the NGO to analyze the photographs; thus, the intervention would not be feasible on a larger scale and within government systems.

Of particular importance is getting the teacher financial incentive system and tools right in relation to assessing learning. The interventions with the most positive results fairly rewarded teachers for improved learning outcomes and included learning assessment data collection from the outset. The latter included gathering baseline learner assessment data and regular assessments throughout the intervention, using tools such as Early Grade Reading Assessment (EGRA); paper and pen administered by a team of assessors; or a digital test, which would involve bringing laptops to schools for assessment (e.g., the Standardized Testing and Reporting [STAR] assessment tool, which tests five subjects in 1 hour). Using national assessment data (e.g., primary leaving examinations [PLE]) as well as national assessments of lower primary classes (e.g., the national assessment of progress in education [NAPE] in Uganda, which assesses children’s learning in primary 2 and primary 6) emerged as also useful. Ultimately, key to success is to ensure that the incentives for improved learning outcomes are fairly linked to teachers’ performance and effort as well as to school-wide incentives. The latter includes a school-wide incentive for all teachers and the head teacher, as well as for inspectors and in-service teacher educators, if national examinations achieve either a pre-agreed benchmark or an improvement of baseline national assessments at the beginning of the intervention (World Bank, 2018). Motivating individual teachers’ efforts, which emerged as a key lesson, was also related to benchmarking, whereby teachers whose students achieved benchmark proficiency levels in specific
subjects received a financial incentive at the end of every term and/or year, and was effective (Evans et al., 2021; Mbiti et al., 2019b).

Cost, which is a cross-cutting factor in all six areas of the framework, is especially relevant here—both the cost of measurement systems and of tools for learning outcomes, and costs focused on addressing teacher absenteeism and/or improving teacher performance. There needs to be careful balancing of systems and tools and the cost of their implementation, in order to enable the best possible improvement of learning outcomes within reasonable and sustainable budgets. With the ongoing emergence of new technology, especially the mobile-phone-based technology increasingly accessible to teachers in low-income countries, cost can be significantly reduced.

**Gaming and corruption**

Gaming issues emerged in all teacher financial incentive interventions, especially those involving use of learner assessment tests to determine teachers’ pay. In Chile, pay incentives linked to a 1-year tournament led to a lot of cheating on the test (Rau & Contreras, 2009). In a pilot project in 12 preschools in Kenya, teachers were eligible for bonuses of up to 85% of their salary, based on attendance. An evaluation found no effect on teachers’ attendance as head teachers, who were tasked with the monitoring role, routinely paid the entire bonus to teachers, even when absent (Glewe et al., 2011). Other gaming examples included reclassifying students as special needs to exclude them from testing or just excluding weak students from tests (this was addressed through penalties for students enrolled at the beginning of the year not taking the tests), teaching to the tests (this was addressed through assessing free-response questions and questions designed to test conceptual understanding), boosting carolific content of meals on test day, and outright cheating (Muralidharan, 2011).

**Design of teacher financial incentive formulae**

The importance of effectively determining the financial incentive amount cannot be underestimated. Muralidharan (2017) highlighted that it is critical to design the bonus formulae well and to make sure that these designs reflect insights from economic theory. Glewe et al. (2010) highlighted the need to carefully assess the dynamics of behavioral patterns when examining performance-related reward schemes. Also, it is critical to take incentive theory (e.g., penalizing attempts to corrupt/game it, and reward gains) seriously at all points. Motivation theories are also important; however, research has found that theories highlighting that extrinsic external incentives can crowd out intrinsic motivation do not apply in most developing country contexts. Muralidharan and Sundararaan (2011) found that motivational financial performance incentives increased intrinsic motivation in contexts such as India and Africa, where career prospects are not differentiated of based on effort, where norms of teacher effort in the public sector are quite low anyway, and where best practice teaching not very different from teaching to the test.

**Political landscape**

Another overarching lesson gleaned from the studies of financial incentive interventions is the criticality of mapping at the outset the political landscape and taking political context and competing agendas into account. It is also important to factor in intertemporal choices.
and discriminatory social norms. Of particular importance are political economy and competing interests, which keep developing countries in a low-learning trap. Actors stuck in low-learning traps characterized by low accountability and high inequality lack either the incentives or the support needed to focus on learning impact. Instead, they are constantly pressured to deliver other services for more powerful players. As actors juggle multiple objectives, relying on each other in an environment of uncertainty, low social trust, and risk aversion, it is often in the interest of each to maintain the status quo – even if society, and many of these actors, would be better off if they could shift to a higher quality equilibrium. (World Bank, 2018, p. 15)

When planning any intervention, but especially one that seeks to improve learning, it is important to bear in mind that all actors have other goals—some stated, some not—and to try to preempt those not stated, such as improved learning in government schools affecting private tuition, per diems from training, job security, patronage, favoritism, and not rocking the boat by performing too well. Otherwise, a situation emerges, such as that in Indonesia, which completely derailed a well-intentioned intervention. Between 2006 and 2015, the Indonesian government tried to increase teacher capacity by nearly doubling the salaries of teachers upon certification; however, political pressures watered down the certification process and left only the pay increase in place. Unfortunately, improvements in teacher performance and in learning did not occur (De Ree et al., 2017; World Bank, 2018).

**Government teacher support and accountability systems**

Ultimately, most interventions seek to find a long-term solution to specific issues in a country’s education sector, and this requires working within and strengthening government systems to implement the intervention. An issue for many financial incentive interventions is the failure to effectively work with the government and within its systems. A positive example emerged from Chile, where the use of government national school assessments was found useful to the success of their teacher pay program (Rau & Contreras, 2009). However, too few positive examples of interventions working successfully with governments and within their systems have been reported.

All countries have support and accountability systems for teachers, involving head teachers, school inspectors, and systems for teacher support, such as the coordinating center tutors (CCTs; in-service teacher educators) in Uganda. Of critical importance in teacher financial performance incentive interventions is to include teacher support personnel, especially head teachers. The literature is awash with evidence highlighting the importance of head teachers in improving learning, especially when they use pedagogical leadership strategies involving regular lesson observations and provision of feedback to support improvement of teachers’ practices.

**Digital teacher professional development**

Globally, the emerging interest in digital approaches to improve education quality, which has been sharpened with Covid-19 and the need to rapidly test a variety of remote and blended learning strategies, is also having an impact on digital tools and approaches for teacher professional development, especially the use of mobile phone technology. Prior to Covid, mobile phones were only used in a few ways to support teacher professional development. For example, the World Bank’s TEACH found teacher training on text as
successful as face-to-face / in-person training. When the effectiveness of the various digital teacher support interventions that were rapidly implemented during Covid-19 have been assessed, more evidence-informed examples of best teacher digital support strategies and tools will emerge. A significant number of interventions have been documented at this stage, especially by multilateral agencies and platforms, as well as civil society surveys. The publication of the largest online survey of teachers and technology during Covid-19 (Pota et al., 2021) is particularly useful; its results can inform teacher financial performance incentive interventions. We eagerly await the 2023 Global Education Monitoring Report, which will focus on technology in education, with background papers already being prepared (Burns, 2021).

Currently, only one initiative can be identified that seeks to link digital teacher professional development with monetary incentives. Nedungadi et al.’s (2017) WhatsApp pilot intervention study required 19 teachers, before they received certain monetary incentives, to send daily reports to coordinators via WhatsApp of what was taught in class. The coordinators also regularly sent small modules as pedagogical support. Key issues with this innovative system, however, are that it operates outside government systems and relies on significant support human resources to manage it.

The World Bank (2018) suggested that performance pay be linked to professional performance and improved learning needs and to straightforward actions teachers can take. We know from the literature what these actions are and what works. Note that, in spite of some of the issues with Bridge Academy and other private school initiatives, their digital approaches, including scripted lesson plans with concrete steps for teachers to support teacher training in developing countries, are emerging as effective (He et al., 2008; Lucas et al., 2014). This provides specific guidance crucial for low-skilled and poorly educated teachers who may lack the ability to be effective when motivated by monetary incentives.

The Power Teachers intervention in Uganda

The financial incentive framework for teachers (Figure 4) is currently being used to inform an intervention focused on mobile-phone-based teacher motivation in Uganda. Change theories also inform the intervention. Fullan’s (1991) work on effective education change theories, models, and strategies is still relevant here, in particular his highlighting of the critical role of taking the realities at a “classroots” (Hawes & Stephens, 1990) level into account. These include, for example, teachers’ personal objective and subjective realities and the realities related to teacher motivation, such as low pay and poor housing. This latter reality, however, continues to be sidelined in the development of teacher-focused education interventions. Too many education interventions fail to fully bear in mind the human motivation aspect, a key part of theories of change (Fullan, 2015). Related to this is the failure of interventions to involve teachers more in new practices, innovations, and reforms they are required to implement. The Uganda intervention’s name, Power Teachers, reflects its focus on teachers themselves and putting the power into their hands to bring about improved learning. They are provided with an incentive to do this; however, ultimately, the power rests with the teachers themselves, and they are provided with some agency to bring about improved learning.

The research-based Power Teachers intervention has three phases:

Phase 1: Development of mobile-phone-based tools (2021–2022)
• Mobile-phone-based teacher absenteeism tool
• Mobile-phone-based professional development tool
• Learning assessment tool (may not be mobile phone based)

Phase 2: Piloting in up to 10 schools in Uganda (2022)
Phase 3: Implementation in at least 100 schools in Uganda (2023–2025)

The intervention aims to address teacher absenteeism, develop teachers’ capacity, and improve learning, at a much lower cost than that of the current strategies supported by the education aid architecture. The project also seeks to demonstrate that it is more cost-effective to use funding to financially incentivize teachers to ultimately improve learning outcomes than to use business-as-usual strategies, which include newly emerging digital and innovative strategies that fail to take teacher agency and their humanity into account. The intervention is being conducted in primary schools; however, it is also suitable for secondary schools.

Working with the MoES in Uganda, the initiative will provide bonus payments of between 10% and 20% of their salaries to teachers, head teachers, inspectors, in-service teacher trainers, and district education officers, with payments triggered by teachers’ and head teachers’ attendance at school, and when

- they are in class teaching,
- they complete proven best practice mobile-phone-based teacher training courses,
- they upload evidence of implementation of new skills learned from courses, and
- their students’ learning improves.

The intervention takes the political landscape into account and also works with and within government systems, two other areas of the framework. It supports MoES Uganda to implement the Teacher Incentive Framework (TIF; MoES, 2018) and Teacher Policy (MoES, 2019), with the former being devised in response to the issues with teacher absenteeism, as well as enabling improved teachers’ performance and students’ learning. The TIF, similar to research discussed by Evans and Yuan (2018), uses Maslow’s hierarchy of needs to illustrate teachers’ motivation issues in Uganda: “Teachers who are tired and hungry and excessively preoccupied with meeting their basic livelihood needs, are unlikely to be involved in professional development activities, nor will society attach much prestige and recognition to such teachers” (MoES, 2018, p. 15). The TIF also notes that, in developed countries, teachers value intrinsic motivation (e.g., a sense of accomplishment) more, but in emerging economies, where teachers still struggle with basics of survival, they are bound to appreciate extrinsic rewards more than intrinsic ones (Muralidharan & Sundararajan, 2011). The TIF framework, based on Vegas and Umansky’s (2005) teacher motivation framework, is centered on four teacher incentive strategies: professional rewards, financial incentives, accountability pressures, and clarity of expectations of teachers.

The Power Teachers intervention is research based, using a three-phase, sequential, mixed methods design building on mixed-method approaches (Cohen et al., 2017; Creswell and Creswell, 2017; Haßler et al., 2020). In phases 1 and 2, a design-based implementation research approach (Penuel et al., 2011) is employed. This enables ongoing refinement of the tools and their implementation in schools in preparation for a larger-scale rollout in phase 3. It also enables the determination of the financial incentive amount, the bonus formulae area in TIF. In phases 1 and 2, using both quantitative and qualitative methods, data is collected in several cycles and analyzed immediately, with the results used to optimize
the tools and the intervention implementation, as well as to refine the research instruments. Data collection tools include lesson observations, interviews, teacher portfolios, focus groups, questionnaires, and learner assessment tools. The mobile phone tool will also enable significant data to be gathered in real time regarding teacher absenteeism, teachers’ participation in professional development, and teachers’ implementation of what they learn. This in-built data collection system is being developed with MoES and other stakeholders, who will be able to access the data on teachers’ attendance and capacity building efforts on an ongoing basis.

Currently, the mobile-phone-based tool is in development, using lessons learned from the teacher motivational financial performance incentives framework. These lessons include:

- The intervention will involve MoES Uganda personnel and work within MoES systems—in particular, Teacher Education, Monitoring and Evaluation (M&E) and policy and planning systems, as well as district education systems. The latter is critical to ensuring that issues informing the framework (e.g., teachers being moved, children enrolled not sitting the test) are addressed through an agreed-upon intervention contract.
- The intervention will use robust low-cost solar-powered and battery friendly smartphones, with the tools pre-uploaded. Teachers will pay back the cost of the smartphones with their incentives over the duration of the project; if a phone is lost or stolen, they need to continue to pay for the lost one as well as a replacement.
- The intervention will use the most cost-effective and least corruptible geo stamp, time stamp, and facial recognition software.
- The tool system being devised will enable, as much as possible, automatic digital monitoring and support to address the major issues of large support personnel highlighted in research studies.
- The intervention will work with the inspectors and Coordinating Centre Tutors (CCTs) to do spot checks of the data the tools provide, especially regarding teachers being in class and their professional development implementation evidence. They will be provided with motivational financial performance incentives for this. Similarly, head teachers will be involved.
- To reduce mobile data costs, much of the tools’ activities will be available offline; mobile data will only be required to send teacher absenteeism evidence, professional development course certificates, and evidence of implementation.

To motivate teachers’ attendance, when evidence (i.e., using geo, facial recognition and time software) of teachers’ in-class teaching is digitally shared via the mobile phone tool, a financial incentive payment is automatically sent to teachers’ mobile phone money platforms. Some additional triggered requests are also sent to teachers periodically to enable verification, as well as some spot checks from time to time.

To support teachers’ professional development, best-practice mobile-phone-based teacher courses that focus on developing teachers’ improved pedagogy, developed by partners (name withheld for anonymity), have been provided for use in this intervention. Teachers can complete the courses, including assessments, offline. Upon successful completion of the assessments, they can send, using mobile data, the certificate for verification and subsequent automatic incentive payments to their mobile money platform. The professional development part of the tool will have pre-uploaded relevant documents, such as policies, memos, and best practices, as well as daily teaching tips. The tips will be
automatically released at the beginning of every week, and at the end of the week, when the system proves they have read them, teachers will receive a financial incentive. The tool will have the capacity for teacher groups and collaboration; however, this is beyond the funding available for phases 1 and 2.

To prove that teachers are using what they learn in the professional development courses in their classrooms, they have to upload evidence of this; this evidence then triggers a mobile money payment to the teacher. The evidence uploads are predefined and can be digitally assessed to reduce costs. The intervention uses random selection of evidence to test the extent to which the evidence teachers are sending in is valid.

The mobile-phone-based tool is also being devised for head teachers, inspectors, and CCTs to encourage their support of teachers and the improvement of learning outcomes. This is beyond the scope of this article.

The third and critical part of the intervention is the improvement of learning outcomes. The intervention is currently in the initial stages of developing the strategy and tools for this. It will use both government system assessments, the PLE, and where applicable, the NAPE as well as EGRA-type assessments currently being devised. Lessons in the framework inform the learning assessment strategy and tool, including penalties for removing learners from the tests, and designing tests that do not enable teaching to the tests (Muralidharan, 2011). The project will also use a waiting-list approach to build in a comparison group of teachers so the learning outcomes of students taught by teachers participating in the pilot can be compared with the outcomes of students taught by teachers who were not involved in the pilot but will participate in the intervention after the pilot has been evaluated.

**Conclusion**

Because the ultimate focus of the teacher financial performance incentive interventions examined in this article and the Power Teachers intervention in Uganda is to improve children’s learning, the opening statement of this article—namely, that nine out of 10 children are not learning (World Bank, 2019)—must also conclude it. Covid-19 has further sharpened the need to address the global learning crisis, exacerbated by forced school closures. Data from 149 countries found a 4-month learning loss by October 2019 for the world’s poorest children, just 6 months into the pandemic (UNESCO et al., 2020). Improving learning must remain at the top of all global agendas.

The introduction also highlighted Beeharry’s (2021) call to those within the education aid architecture to use available funding to target the achievement of FLN and thus address the learning crisis. This article concludes by calling for this funding to target teachers and enable them to effectively improve learning outcomes, especially FLN. We know from research that teachers, and especially pedagogy, are key to improving learning. We also know from research the pedagogical practices and teacher professional development strategies that work best. Yet, so much investment in supporting teachers has not improved learning. I examined a key reason for the failure of these investments: teacher absenteeism. Recent studies highlight that teacher absenteeism is itself a crisis, with the latest research in eight countries in Africa finding absenteeism rates of between 15% and 45% (UNICEF, 2020). If teachers are not in class, learning outcomes cannot improve. I then went on to examine the reasons for teacher absenteeism, highlighting poor teacher motivation as a key reason, with teacher compensation emerging as the most significant cause of poor teacher motivation. In light of the key role of motivation, too many Education interventions fail
to fully bear in mind the human aspect, the motivation aspect, a key part of theories of change. We need to address this gap going forward.

I then focused on the second (the first being teacher absenteeism) of two elephants in the classroom: motivational financial performance incentives. In presenting the evidence of various interventions that used financial incentives for teachers, I questioned the absence of this from the current education aid architecture repertoire of effective approaches to improving education quality and children’s learning. The research literature of teacher financial incentive interventions highlights the success of the approach, both in successful interventions and those deemed unsuccessful but with some successful elements. Yet, financial incentive approaches seem to have been dismissed as ineffective. This led to the development of a motivational financial performance incentives framework to spark debate about the potential of the approach as well as to inform future interventions, including an intervention currently in its initial stages in Uganda.

I then asked the question “Is there another way to support teachers within government systems that is more cost-effective and sustainable, leads to implementation of what teachers learn, and improves students’ learning?” I proposed that teacher motivational financial performance incentive approaches, informed by lessons learned and best practices from studies of incentive interventions, which are encapsulated in the teacher performance incentive framework, provide the other way. The research-based three-phase Power Teachers intervention in Uganda, currently in phase 1, will gather evidence throughout the intervention, as well as from its final evaluation, that will highlight if this approach is the other way, or at least another way, that ultimately improves learning. We must continue the war against poor learning outcomes; the quality of the lives of too many children are at stake.

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