

# Policy Brief

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## Evaluating the Impact of Teacher and School Performance Incentives on Learning Outcomes

### 1. Introduction

The goal of creating incentives for teachers and by extension administrators of primary schools to enhance classroom attendance is to restore contact time between teachers and students. The expectation is that teacher presence will be beneficial for students, allowing more comprehensive coverage of learning material achieved through lengthening the student-teacher interactions<sup>1</sup>.

However, in the realm of development practice, it is always possible, even common, that inputs don't necessarily lead to outcomes as anticipated in the design of schemes for improved service delivery.

Given this divergence between means and ends, it is crucial that careful measurement of outcomes related to any specific intervention is conducted to accurately determine whether the program is having the desired impact. This forms a strong basis either for recalibration of the program, or, the decision on whether to exit entirely and if it works – how it can be scaled up. As such, this justifies the need for impact evaluation as a useful mechanism for guaranteeing value for money and providing confirmation that we are doing the right things in the right ways.

Despite the clear benefits of impact evaluation, questions still arise about the significant costs of this activity. Impact evaluation also suffers from a mismatch in demand in that those for whom the evidence that is generated through evaluation would be most useful i.e. decision makers, there are poor incentives for its uptake. Furthermore, the long amount of time it takes to conduct evaluations can lead them to be 'overtaken by events' thus seriously compromising their usefulness for policy<sup>2</sup>.

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<sup>1</sup> (Uwezo, 2021)

<sup>2</sup> (Julia Kaufman 2022)

This brief provides a primer on the key dimensions of impact evaluation in the next section, followed by a proposal for an integrated approach to Evaluating the Impact of Teacher and School Performance Incentives on Learning Outcomes; and a conclusion.

## **2. Impact Evaluation**

“what gets measured, gets done” – Peter Drucker

### **What?**

In simple terms, Impact evaluation is a means of establishing whether X caused Y, i.e. did the school and teacher incentives result in increased teacher attendance and therefore improved learning outcomes. In other words, the main concern of impact evaluation is to isolate the net contribution of a set of actions to specific outcomes by identifying the causal relationships between them. Relatedly, therefore, Impact evaluation also enables the comparison of outcomes with other policy alternatives e.g. using contract teachers instead or different counterfactual scenarios.<sup>3</sup>

### **Why?**

The power of impact evaluation is by clarifying the cause-and-effect dimension<sup>4</sup>. Information on the efficacy of teacher incentives on student performance will supports important policy decisions such as setting expenditure priorities and scaling of the intervention. Similarly, evaluation provides insight into precisely why a program is working i.e. the aspects that are responsible for the results being observed<sup>5</sup>. This is especially important because it validates the chosen mechanism which is incentivizing teachers and schools to enhance teacher attendance leading to more teaching and potentially better learning. Furthermore, the returns to effective evaluation have been shown to be exorbitant, up to 7.4 times-cost in certain cases.<sup>6</sup>

### **How?**

Firstly, recruiting the help and support of key stakeholders is an unavoidable prerequisite for smoother execution of impact evaluation.<sup>7</sup> Therefore, the explicit

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<sup>3</sup> (Julia Kaufman 2022)

<sup>4</sup> (Paul J. Gertler 2016)

<sup>5</sup> (Abhijit V. Banerjee n.d.)

<sup>6</sup> (Mary Kay Gugerty 2018)

<sup>7</sup> (Paul J. Gertler 2016)

buy-in of lead implementers like the Ministry of Education and Sports as well as political allies like local leaders and teachers' unions is required.

Secondly, methods for good impact evaluations vary and include both qualitative and quantitative approaches. These approaches are sometimes mixed to form integrated and hybrid methods to evaluate impact. Given that the proposed intervention has highly influential political constituencies that can influence the outcomes of this process, it is recommended that some qualitative elements are added to incorporate their attitudes and perspectives before and after the evaluation process. The contexts for evaluation vary along with the methods deployed. It is recommended however that as much as possible, technology should be utilized to bring down costs of data collection<sup>8</sup>, and as such an evaluation of this intervention which is mediated through a technology platform is likely to be relatively cost-effective.

### **3. An Integrated Approach to Evaluating the Impact of Teacher and School Performance Incentives on Learning Outcomes**

#### *i. Theory of Change*

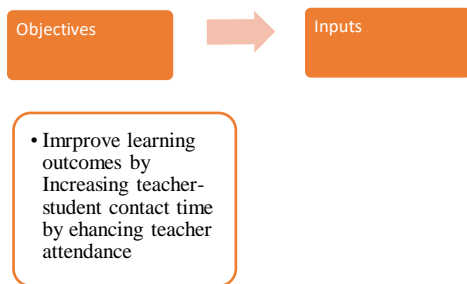
This theory of change logically maps the journey from the identified problem, the introduction of inputs to tackle said problem, and the expected impact as a result.<sup>9</sup> Specifically, Figure 2 below is an illustration of the path from enhanced teaching attendance to better learning outcomes.

#### ***Figure 1: Moving from Inputs to Outcomes***

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<sup>8</sup> (Julia Kaufman 2022)

<sup>9</sup> (Nitsche n.d.)



## ii. Developing Indicators

Indicators rely on smart goal setting at both the intermediate and final levels. The indicators should facilitate the efficacy of the Impact Evaluation by enhancing its ability to attribute outcomes to the arrangement of inputs.<sup>10</sup> In addition, indicators should be linked to sources of information that are available.<sup>11</sup> Figure 2 shows how we can draw from the last stages of the theory of change to develop intermediate(output) and final (outcome) indicators.

### Outputs

Output	Output Indicator	Means of Verification
Schools provided with biometric tracking equipment	No. of schools with installed biometric equipment	Monitoring and inspection reports
	No. of schools with working biometric equipment	Monitoring and inspection reports
Teachers provided with additional incentives	No of teachers opted in the program	School level info/ Biometric data
	Amount paid out to teachers (by teacher, school, district & region)	Biometric data
	No of days in the month teachers attended	Biometric data

<sup>10</sup> (Eval Community n.d.)

<sup>11</sup> (United Nations Educational, Social and Cultural Organization 2015)

### *Outcomes*

<b>Outcome</b>	<b>Outcome Indicator</b>	<b>Means of Verification</b>
Improved Early Grade Reading	% improvement in early-grade reading	Annual school level assessment (by school)
	% improvement in Primary Leaving Examination (P.L.E.) English exam	Annual national level assessment (by the Uganda National Examinations Board – UNEB)
Improved Mathematics Performance	% improvement in Maths scores	Annual school level assessment (by school)
	% improvement in Primary Leaving Examination (P.L.E.) Maths exam	Annual national level assessment (by the Uganda National Examinations Board – UNEB)

### *iii. Monitoring the performance*

In order to ensure the integrity of the results from the evaluation, the process by which inputs are translated to outputs and outcomes should be overseen carefully.<sup>12</sup> To do this effectively, the indicators identified above should be incorporated into the Education Management System for ongoing tracking of activities under the program<sup>13</sup>. For instance, monitoring will establish whether the incentives reach the intended beneficiaries and that users are not abusing or manipulating the biometric tracking equipment.

### *iv. Causal Inference*

The gold standard for extracting causal links in development interventions is the use of Randomized Control Trials where there is random assignment of the treatment and control groups, thus removing any systematic bias with experimental evidence. However, the teacher attendance incentive program will be opt-in and thus it is difficult to claim randomization of the sample – because of the intrinsic motivation of the early adopters (treatment group) in this reform.

However, the next best thing would be to carry out an Ex-post evaluation that uses Difference in Difference comparisons between schools of similar characteristics at

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<sup>12</sup> (Paul J. Gertler 2016)

<sup>13</sup> (United Nations Educational, Social and Cultural Organization 2015)

baseline, or before the commencement of the program (i.e. experienced parallel trends\* in terms of historical performance, are geographically close or do not have any important observable systematic differences). The setup may be as follows:

**Table 1: Difference – In – Difference Comparison to estimate the net effect of teacher incentives on learning outcomes of students.**

	<b>Control Group</b> (Schools where few or no teachers opted into the incentive scheme but have same characteristics as schools where teachers opt-in)	<b>Treatment Group</b> (Schools where many teachers opt in to the incentive scheme)	<b>Cross-Sectional Difference</b> (Treatment – Control)
<b>Time</b>			
<b>Period 1 (Before)</b>	A	B	$G = A - B$
<b>Period 2 (After 3 years)</b>	C	D	$H = C - D$
<b>Period 3 (After 5 years)</b>	E	F	$I = E - F$
<b>Time Series Difference</b>	J	K	Difference in Difference Estimate

Impact after 3 years

**H - G**

Impact after 5 years

**I - G**

The Difference in Difference (DiD) estimator above will be a good indication of the impact of the treatment (in this case, incentives and higher teacher attendance) on the test scores that proxy learning attainment.

This evidence can be augmented by carrying out an ex-ante simulation using baseline data<sup>14</sup> to estimate the expected effect of this program. The DiD estimate can be compared against the results from ex-ante simulation to determine whether some of the assumptions made at the beginning of the reform were maintained and the objectives of the program realized.

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\* **The parallel trends assumption:** if the treatment group had not been treated, the change over time in the outcome in the treatment group would have been the same as the change over time in the outcome that we actually observed in the control group.

<sup>14</sup> (Paul J. Gertler 2016)

Furthermore, Qualitative approaches such as focus groups may be considered to add another layer of evaluation whereby we incorporate qualitative ideas about how the program design can be improved in ways that satisfy the interests of stakeholders such as teachers, heads of schools, school inspectors, local governments etc.

*v. Costs of the evaluation*

The exponential growth in the use of Impact Evaluation across the world<sup>15</sup> may begin to lower the cost of conducting these experiments. The cost drivers within an impact evaluation of this nature are largely in setting up the technological infrastructure, continuous monitoring of implementation, and hiring labor to support the evaluation.

However, it is advisable to consider the costs of evaluation in terms of the benefits of evidence production which is an input to policies for better service delivery.

#### **4. Conclusion**

The road to evaluating the impact of any program is by no means, a straight one. The most important role played by the increasingly popular practice of impact evaluation is allowing policymakers to identify what specific configuration of inputs is leading to the observed outcomes. Evidently, impact evaluation saves time and money.

In this particular case, to the extent that conducting an Impact Evaluation can help us to adequately answer the question of whether wages and grant incentives for teachers and schools, respectively will finally get the teacher to the classrooms, and further to that, whether teachers spending more class time with students will result in improved numeracy and literacy – then Impact evaluation should automatically become a fixture within this program design and implementation.

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<sup>15</sup> (Julia Kaufman 2022)

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