

Understanding Education Policy Preferences: Survey Experiments with Policymakers in 35 Developing Countries

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Abstract

Foreign aid donors and international organizations supporting education in developing countries have increasingly coalesced around a policy agenda prioritizing foundational learning, measured by test scores in primary school, based on a diagnosis of deficient school quality, and a growing body of empirical evidence about effective interventions to improve quality. We survey over 900 senior government officials working on education in 35 low- and middle-income countries to gauge their alignment with this agenda. Using conjoint and survey experiments, we show that on average policymakers prioritise vocational over foundational skills. We then seek to explain variation in preferences as a function of three possible factors: different objectives for education (e.g., test scores versus socialization), different beliefs about the state of the world (e.g., enrollment and learning levels), and different beliefs about the effectiveness of specific interventions. Misalignment with donor agendas is evident in all three dimensions. We also show experimentally that beliefs can be changed through the provision of evidence.

Keywords: foundational literacy, vocational education, bureaucracy, policy preferences, conjoint, discrete choice

JEL codes: H40, H52, I22, I25, O15

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The data used in this paper is available here: <https://www.cgdev.org/sites/default/files/education-policy-maker-preferences-codes-and-data.zip>. More information on CGD's research data and code disclosure policy can be found here: www.cgdev.org/page/research-data-and-code-disclosure.

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1 Introduction

The international community has declared a “learning crisis” in the developing world (see Figure A1). To address this crisis, a loose coalition of international actors – including the World Bank, the UK government, and philanthropies such as the Bill and Melinda Gates Foundation – has coalesced around a broad policy agenda. This agenda prioritizes improvements in narrow measures of literacy and numeracy over broader educational goals; investments in primary over secondary, vocational, or tertiary education; accountability reforms over additional resources for education; and technocratic administration of scientifically proven policies over participatory, local decision-making.¹ This agenda is reflected in spending patterns – among large donors to education, the United States and United Kingdom have by the far the highest spending on primary education (64 percent and 40 percent of all their education aid, respectively), and amongst the lowest spending on vocational education (2 percent and 7 percent, respectively. Figure A2).

International actors have little ability to enact this policy agenda directly. Foreign aid for education constitutes a tiny share of education budgets, even in many of the world’s poorest countries, rendering financial carrots and sticks fairly impotent (Hares and Rossiter, 2019)(Figure A3). Instead, the promulgation of this reform agenda hinges on the diffusion of ideas. Governments in the developing world must be persuaded these policy priorities make sense. Ultimately for outside policy reform efforts to have any chance of success, donors

¹The World Bank’s flagship 2018 World Development Report focused on the ‘Global Learning Crisis’. This report defines a global learning crisis as severe shortfalls in learning, e.g., that less than half of children in Africa who make it to the last year primary school achieve basic minimum levels of functional literacy and numeracy. In the same year, the UK government’s aid ministry outlined a new education policy with the objective of “tackling the learning crisis at its root” (DFID (2018)), and a new USAID education policy repeated “There is a learning crisis” (USAID (2018)). The learning crisis was the focus of the Bill and Melinda Gates Foundation’s global education program strategy (Beeharry (2021); Bill and Melinda Gates Foundation (2021)), and the 2016 Education Commission report (The International Commission on Financing Global Education Opportunity (2016)).

need to make more effort to understand the beliefs of policymakers in order to influence them (Smets, 2019).

Do policymakers and bureaucrats in low and middle income countries buy into the new consensus of global elites? The preferences of civil servants matters for policy outcomes particularly in imperfect democracies, and in the policy areas that are least politically salient (Baekgaard et al., 2015). In this paper we report on a survey of over 900 senior officials from 35 developing country governments, primarily from ministries of education and related agencies. The survey probes respondents' agreement with various premises and policy proposals of the reformist agenda. Here we report on six main findings.

First, in line with our hypothesis, vocational education is a higher priority for policymakers than foundational learning. They report that vocational education is higher priority for additional aid, and select it more often when forced to choose between hypothetical concrete projects in a conjoint experiment. In the conjoint experiment they place a higher monetary value on projects in vocational education than primary schooling. Our work here complements other recent studies using conjoint or discrete choice experiments to study preferences over alternative social policies in the developing world (Briggs, 2021; Redfern et al., 2019; Solomon and Zeitlin, 2019).

Second, national policymakers place a higher weight on the socialisation function of education than the production of human capital. When forced to make trade-offs in another conjoint experiment, officials rank socialisation as the highest priority outcome of the education system, followed by secondary school completion, with foundational literacy and numeracy last. Here our work complements other work showing the importance of nation-building as a motive for government provision of free education (Bandiera et al., 2018; Cantoni et al., 2017; Paglayan, 2021). This stands in contrast to the emerging focus of some global elites primarily on foundational learning.

Third, policymakers have accurate beliefs about average schooling levels, average spending on education, and labour market returns to schooling, but overestimate foundational learning levels in their country. Specifically, policymakers guess that on average 47 percent of 10 year olds in their country can read, compared with World Bank estimates based on actual assessment data of only 23 percent. Here our study relates to other work understanding the relevant knowledge of public officials (Bold et al., 2017; Das et al., 2016; Liu et al., 2017; Rogger and Somani, 2018).

Fourth, officials agree with the premise that investments in education yield high returns, including for girls and disadvantaged pupils. This premise contrasts with another common view of education systems as primarily playing a sorting role or providing a “filtration system” designed to select the most talented individuals for further education and eventual administrative jobs (Muralidharan and Singh, 2021). We distinguish these views by eliciting officials’ perceptions about the returns to education, in a similar fashion to Jensen (2010). Officials believe that pecuniary returns to secondary schooling are high, particularly for poorer pupils.

Fifth, we seek to explain variation in individual preferences. We regress individual preferences on underlying beliefs. Beliefs about the actual level of foundational learning in a country predicts preferences for new spending on foundational learning. Foundational skills may thus be under-prioritised in part because policymakers don’t realise how bad the situation really is. We see no statistically significant correlation between preferences and beliefs about the effectiveness of interventions.

Finally, officials are receptive to empirical evidence on “what works” in education. We conduct a survey experiment which randomly (but truthfully) varies the description of empirical research results, and measure the prior and posterior beliefs of officials about effect sizes. We find that officials place no weight, or even negative weight, on randomized experiments per se. They are more influenced by sample size and contextual similarity of the

study setting to their own country. Here we add to an emerging literature on how policymakers respond to evidence. Though government officials are subject to cognitive biases in decision-making (Vivalt and Coville, 2020; Banuri et al., 2019), they do update their beliefs in response to new information (Lee, 2020; Masset, Gaarder, Beynon and Chapoy, 2013) and follow through on different policy actions (Hjort, Moreira, Rao and Santini, 2021). Our findings are in line with others that find that policymakers from multilateral development banks (Vivalt et al., 2021) and US education agencies (Nakajima, 2021) care more about external validity than internal validity.

The rest of the paper is organized as follows. In section 2 we present the survey design and respondent characteristics. In section 3 we present estimates of policy preferences of policymakers. In section 4 we set out potential explanations for variation in policymaker preferences. Section 5 concludes.

2 Data

Our sample frame is all senior government staff with an education or aid related job, now or in the recent past. The modal respondent is a Director in a Ministry of Education, but the full sample spans from some Ministers to some more junior officers, at Ministries of Finance, and independent agencies for technical or higher education. In each country we recruited a consultant with good networks and access who first compiled a draft list of potentially relevant senior officials. This list was reviewed by the research team, and consultants then conducted interviews, in-person where possible or by phone (many countries had mobility restrictions in place due to COVID-19). The initial set of lists contained 1,056 potential respondents. Overall 684 of these names were successfully interviewed (65 percent). An additional 247 interviews were conducted with respondents who were not on the initial lists compiled by consultants, but did meet the criteria for interview, for a total of 931 interviews.² Surveys began on 5th March 2020 and continued through 9th September 2020.

2.1 Country Sample

We selected countries purposefully to cover a range of income levels and geographies, with a weighting towards those with weak educational outcomes and high levels of aid for education (based on OECD Creditor Reporting System data). Selection was also influenced through practical considerations in terms of the availability of consultants with the required access to respondents. The majority of these countries are low income (18) or lower-middle income (13) according to World Bank classifications. Twelve are in Anglophone Africa, 12 in Francophone Africa, and 6 in Asia-Pacific (Table 1, Figure A4).

²We compare the characteristics of respondents from the original sample and the additional respondents in Table B1. Additional respondents are somewhat less likely to be at the Ministry of Education (57 percent, vs 70 percent in the original sample), and less likely to be a director or assistant director (44 percent, vs 60 percent in the original sample). We also show that our main findings are robust to focusing only on those respondents from the original sample in Appendix C.

Table 1: Country Sample (Region and income group)

	Anglophone Africa	Francophone Africa	Asia-Pacific	Other	Total
LIC	Gambia, Liberia Malawi, Sierra Leone Tanzania, Uganda	Benin, Burkina Faso DRC, Madagascar Mali, Rwanda, Togo	Nepal	Guinea-Bissau Haiti Mozambique Somalia	18
LMIC	Ghana, Kenya Nigeria, Zambia	Cameroon, Comoros, Congo, Cote d'Ivoire	Bangladesh Pakistan Solomon Islands Vanuatu	Angola	13
UMIC	Namibia, South Africa	Gabon	Georgia		4
Total	12	12	6	5	35

Note: LIC stands for low-income countries, LMIC for lower-middle income, and UMIC for upper-middle income, all according to the World Bank's country income classification.

2.2 Characteristics of policymakers

Most officials in our sample are middle-aged men. Seventy-two percent are male, and have a median of 11 years of experience. Forty-two percent are Directors or Director Generals, and 22 percent Deputy or Assistant Directors. The sample included 29 current, former, deputy, and sub-national Ministers of Education. Fifty-seven percent of officials work for a Ministry of Education, nine percent in an independent technical and vocational (TVET) or skills agency, eight percent in an independent higher education agency, and three percent in the centre of government (Ministry of Finance, President’s Office, or Planning Commission). Forty-one percent of officials are from Anglophone African countries, 28 percent from Francophone Africa, and 17 percent from Asia (Table 2).

Table 2: Characteristics of officials

	Full Sample	Asia- Pacific	Anglo- phone Africa	Franco- phone Africa	Others*
Agency (% of respondents)					
Ministry of Education	66.6	68.9	66.1	61.5	76.0
TVET/Skills Ministry/Agency	8.3	3.1	8.9	14.5	0.0
Higher Education Ministry/Agency	6.3	1.9	8.1	7.3	4.8
Centre of Government	6.3	15.5	4.4	3.8	5.6
University	4.3	3.1	2.1	7.3	6.4
Local Government	2.5	0.6	5.7	0.0	0.0
Others	1.9	1.2	3.1	1.5	0.0
Missing	3.8	5.6	1.6	4.2	7.2
Total	100.0	100.0	100.0	100.0	100.0
Job Title (% of respondents)					
Minister	2.4	5.6	1.3	0.0	6.4
Advisor	3.7	0.0	0.5	6.5	12.0
Permanent Secretary/Director General	9.0	13.0	7.0	12.2	3.2
Director	32.3	24.8	32.9	33.2	38.4
Assistant/Deputy Director	23.5	23.0	31.6	17.2	12.8
Officer	17.3	25.5	15.4	18.7	9.6
Academic	4.3	3.1	2.1	7.3	6.4
Missing	7.5	5.0	9.1	5.0	11.2
Total	100.0	100.0	100.0	100.0	100.0
Gender (% of respondents)					
Female	26.6	30.4	31.9	19.1	21.6
Male	71.6	66.5	67.4	79.0	76.0
Missing	1.7	3.1	0.8	1.9	2.4
Total	100.0	100.0	100.0	100.0	100.0
Region (Row Percentage)	100.00	17.31	41.09	28.17	13.44
Observations	931	161	383	262	125

Note: *Others includes Lusophone Africa (Angola, Mozambique & Guinea-Bissau), Haiti and Somalia. Centre of Government includes officials based at the President or Prime Minister's Office, or Ministry of Finance, Planning, or Public Service.

3 Measuring Policymaker Preferences

We measure policymaker policy preferences both directly and indirectly. We first ask officials to choose a topic for a hypothetical aid project. The most common response is technical and vocational education (54 percent of respondents – Figure A5). We also ask them to prioritise indicators from the Sustainable Development Goals. The skills and employment-related indicators are ranked more highly than foundational learning (Figure A6). We also ask what officials view to be the most important reform in the last five years. The most common responses are curriculum and free education (mentioned by 20 percent of respondents each). Technical and Vocational education (TVET) is the fourth most frequently mentioned reform (by 10 percent of respondents). A reading or literacy program was mentioned by just 2 percent of respondents A7).

Aid is not an open marketplace - recipients are unlikely to reject a project or push back too strongly on resource decisions made by donors. We therefore use a conjoint experiment to allow (and force) respondents to make an explicit choice between two concrete options, allowing us to draw out and estimate underlying preferences. Conjoint experiments also mitigate social desirability bias (Horiuchi et al., 2021), and also give us a quantitative estimate of the dollar value respondents place on projects in different sub-sectors. We ask officials to choose between two hypothetical aid projects. Each respondent makes six binary choices between two projects. Each project has three attributes that are randomly generated for each choice (Figure A8);

- 1) the focus of the project (information technology, school construction, foundational literacy, assessment, or technical and vocational education),
- 2) the total dollar budget of the project (\$30m, \$32m, \$34m, \$36m, \$38m, or \$40m) and

3) whether the project comes with one, two, or no full-time technical advisors.³

Our analysis of the experimental data is grounded in a random utility model a la [McFadden \(1973\)](#). The respondent chooses the bundle of attributes that gives them the most utility. Therefore, formally project B is chosen over project A by individual i if their utility derived from that project is greater, or if $U_{Bi} > U_{Ai}$. The probability that this will occur is a function of a vector X of project characteristics K , and an individual-specific error term *epsilon*.

$$P[U_{Bi} - U_{Ai} > 0] = P \left[\sum_{k=1}^K \beta_k (X_{Bk} - X_{Ak}) + (\epsilon_{Bi} - \epsilon_{Ai}) > 0 \right] \quad (1)$$

We therefore regress project choice (A or B) on the characteristics of those two projects. Our results show no substantial difference between Marginal effects from the Logistic model and the Linear Probability Model, hence we present and discuss the results from the latter. The marginal effects of the Logistic model are discussed in the appendix for robustness.

Turning to the results presented in Table 3, each \$1 million increase in the budget of a bundle choice increases the probability of that project bundle being chosen by 1.2 percent. Holding budget constant, being offered a TVET project rather than any other project type (foundational literacy, assessment, construction, or IT) increases the chance of a project being chosen by 10-11 percent. None of the other project types are statistically significantly different from the omitted base category (IT project). Thus officials prefer TVET projects

³Donors spend large sums on advice and technical assistance for partner governments. For example the World Bank alone spends on the order of \$200 million per year on providing advice to developing countries ([Knack, Parks, Harutyunyan and DiLorenzo, 2020](#)). Total technical assistance from DAC donors is 6 percent of all bilateral aid, or around \$4 billion per year ([OECD, 2017](#)). Given wide-ranging uncertainties in the policy-making process, it is very hard to quantitatively assess the value provided by technical assistance. Advice might be high quality but fail to be of use due to unforeseen political or administrative constraints, which may or may not be the fault of the advisor.

roughly as much as a \$10 million budget increase (holding sector constant). These effects are robust to controls for official's characteristics. There is a stronger preference for TVET projects from officials who work in TVET agencies (28 percent more likely to be chosen), but we still see a positive choice for TVET amongst non-TVET agency officials (9 percent more likely to be chosen). Each technical advisor causes an increase in a project bundle being chosen of 3.3 percent. Hence, we can infer the value of each additional technical advisor at around \$3 million.

Table 3: Conjoint Experiment Results: Aid Project Preferences

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
Budget (USD million)	0.124*** (0.00383)	0.126*** (0.00704)	0.0721*** (0.0199)	0.132*** (0.00707)
Technical Advisors	0.0376*** (0.00727)	0.0378*** (0.00753)	0.0952*** (0.0336)	0.0319*** (0.00776)
TVET	0.123*** (0.0192)	0.113*** (0.0196)	0.283*** (0.0674)	0.104*** (0.0205)
Assessment	0.0224 (0.0196)	0.0173 (0.0202)	0.140 (0.0834)	0.00541 (0.0210)
Foundational Literacy	-0.00455 (0.0203)	-0.0104 (0.0210)	0.0481 (0.0852)	-0.0119 (0.0219)
School Construction	0.0221 (0.0190)	0.0176 (0.0196)	0.197*** (0.0714)	0.00541 (0.0207)
Controls		Yes	Yes	Yes
Obs. (Responses)	8,558	8,078	556	7,414
Obs. (Respondents)	733	690	47	634
R ²	0.508	0.508	0.529	0.508
P-value on tests of equality:				
Assessment = School Construction	0.9870	0.9893	0.5026	1.0000
Assessment = FLN	0.1517	0.1540	0.3192	0.3845
FLN = School Construction	0.1906	0.1876	0.1062	0.4316

Note: The unit of observation is a hypothetical aid project presented to an individual respondent, and the dependent variable is an indicator that the project was selected as preferable (from a set of two options). Estimates are based on a linear probability model. Results are similar using a logit model (Table B4 and Table B5). The omitted category for projects is an IT project. Results are similar when estimating marginal means rather than average marginal component effects (Leeper et al., 2020). Controls include years of experience, gender, job title, agency and country fixed effect. Standard errors, clustered at individual respondent level, are in parentheses

* p<0.1, ** p<0.05, *** p<0.01

4 Explaining Policymaker Preferences

Different policy priorities could be due to different objectives, or different information. Some donor rhetoric stresses the need to concentrate public spending on primary education. This choice is often justified by the role of foundational learning as a long-term investment in human capital, particularly for disadvantaged groups. In contrast, national policymakers spend large shares of education budgets on secondary, vocational, and tertiary education, somewhat out of proportion to the share of pupils attaining these levels. Meanwhile, basic learning levels in primary school remain very low even in countries rapidly expanding access to these higher education tiers (see e.g., Ghana). Economists have suggested that this pattern may be attributable to the priority that policymakers place on socialization and political indoctrination over basic literacy and numeracy goals (Pritchett and Viarengo, 2015; Cantoni, Chen, Yang, Yuchtman and Zhang, 2017). Empirical studies show that unemployed youth can lead to political instability and even violence, giving governments good reason to focus on investments that promise to address this issue, such as vocational education (Blattman and Miguel, 2010). In the following sections we present new survey data on policymakers' perceptions of the objectives of education, the status quo of education in their countries, and the effectiveness of interventions to improve learning.

4.1 Different Objectives

How do policymakers weight different objectives of education? We conduct a second conjoint experiment in order to estimate these weights. Is education for providing universal basic skills, for getting children through school, or for socialisation? When these goals are in tension, what kinds of trade-offs are policymakers willing to make? Preferences over these goals should inform preferences over policy.

We present each official with four binary choices between two hypothetical states of the world. Each state has three education outcome attributes that are randomly varied for each choice (Figure A8):

- 1) the share of the population with foundational literacy (40, 60, 80, or 100 percent),
- 2) the share completing secondary school (40, 60, 80, or 100 percent), and
- 3) the share that are dutiful citizens (70, 80, 90, or 100 percent).

We ask respondents which state of the world they would prefer between the two hypothetical scenarios.

Table 4: Conjoint Experiment Results: Education Outcomes Preferences

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
% with Foundational Literacy	0.624*** (0.0404)	0.632*** (0.0418)	0.441*** (0.162)	0.649*** (0.0435)
% Completing Secondary School	0.719*** (0.0412)	0.731*** (0.0430)	0.879*** (0.162)	0.716*** (0.0452)
% Dutiful Citizens	0.908*** (0.0584)	0.909*** (0.0609)	0.870*** (0.208)	0.907*** (0.0646)
Controls		Yes	Yes	Yes
Obs. (Responses)	6,730	6,366	526	5,760
Obs. (Respondents)	853	806	66	730
R ²	0.136	0.138	0.139	0.139
P-value on tests of equality:				
Literacy = Secondary School	0.1259	0.1262	0.0766	0.3212
Citizen = Secondary School	0.0131	0.0257	0.9757	0.0237
Citizen = Literacy	0.0001	0.0003	0.0928	0.0014

Note: The unit of observation is a hypothetical state of the world, presented to an individual respondent. The dependent variable is an indicator that this state of the world was preferred (from a set of two options). Estimates are based on a linear probability model. Results are similar using a logit model (Table B6 and Table B7). Controls include years of experience, gender, job title, agency and country fixed effect. At the foot of each column we report p-values on the null that one attribute is as equally valued as another. Standard errors, clustered at individual respondent level, are in parentheses

* p<0.1, ** p<0.05, *** p<0.01

We estimate equation (1) presented in section 3 using the education outcomes presented above as the attributes. The results from this experiment show that officials value all three outcomes of an education system, but that they value having more dutiful citizens the most. Specifically, an education system that generates ten percentage points more dutiful citizens

makes an official nine percent more likely to choose it, whereas a system that generates ten percentage points more children who have attained foundational literacy makes an official only six percent more likely to choose it (Table 4). In other words, dutiful citizens are worth 50 percent more to officials than children learning how to read.

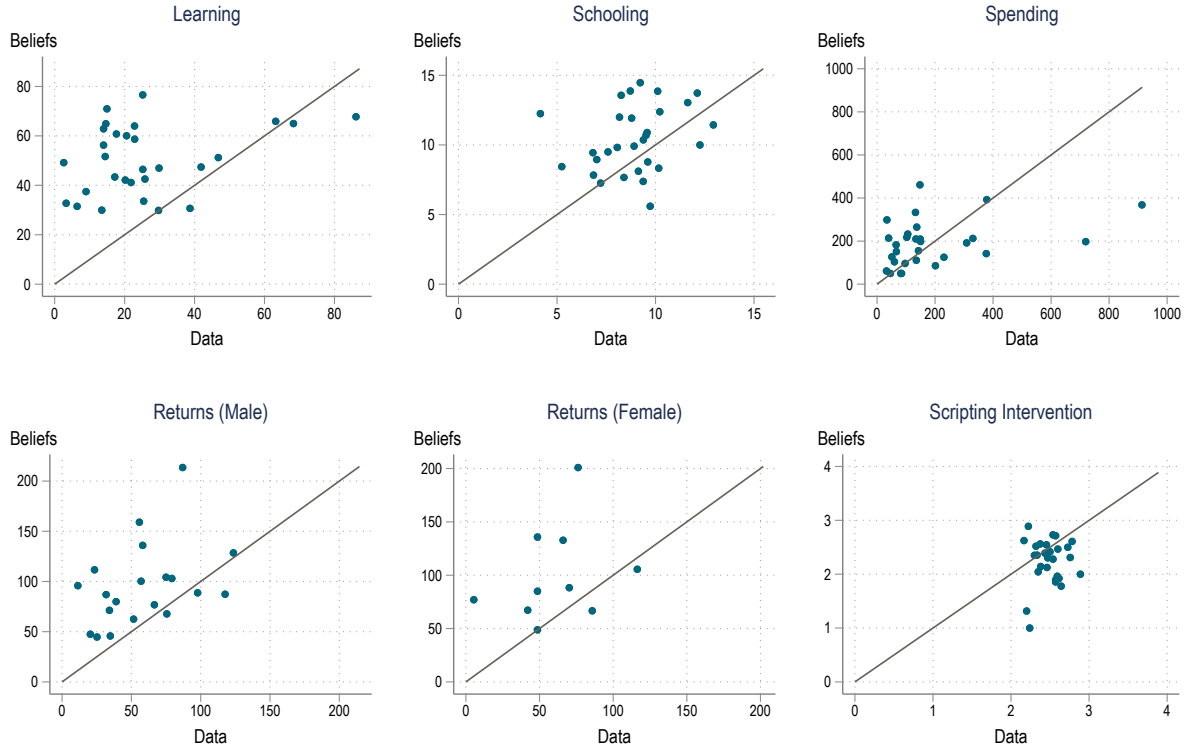
4.2 Different beliefs about reality

Beliefs about foundational learning

Do policymakers have weak support for foundational learning because they don't recognise that there is a learning crisis? When asked directly, the overwhelming majority of respondents agreed that there is a learning crisis - globally (77 percent) and nationally in their own country (81 percent – Table 5). However officials underestimate the scale of this crisis. We ask them to estimate the share of students in their country that can read by age 10. We then compare this to estimates of the actual shares of students, calculated using the World Bank Learning Poverty indicator.⁴ Officials systematically and in some cases quite dramatically over-estimate the share of pupils who can read at an appropriate level by age 10. Though perceptions are correlated with assessment data, on average officials in our sample estimate that 47 percent of children can read by age 10. This compares to World Bank estimates based on actual national learning assessments for the countries in our sample of just 25 percent (Figure 5). By contrast, we see much smaller differences between average beliefs and actual data with regards to average levels of schooling or government spending per pupil (Figure 1). This over-estimation of reading levels may partially explain the low priority given by national officials to foundational learning.

⁴The World Bank provides estimates of learning poverty for 14 of the countries in our sample, and estimates of harmonized learning outcomes for another 19 countries. We have no comparable data for Comoros, Cote D'Ivoire, and DR Congo. For the 19 countries with harmonized learning outcome data but no learning poverty data, we impute learning poverty using a simple bivariate regression. In this we regress learning poverty on harmonized learning outcomes for the 113 countries with data (as of 2020). The R-squared in this regression is high: 0.785.

Figure 1: Policymaker Beliefs and Data on Education Systems



Note: This figure shows average responses for each country, compared against data for each country from external sources. Panel (a) Respondents were asked to estimate the share of 10 year olds in their country that have reached the appropriate minimum learning level expected for their age. This is compared with estimates based on the World Bank Learning Poverty indicator. Panels (b) and (c) compare respondent estimates of average schooling and average per pupil spending with data from the World Bank Development Indicators. Panels (d) and (e) compare respondent estimates of the wage gain from secondary school to data-based estimates from [Montenegro and Patrinos \(2014\)](#). Panel (f) compares respondent estimates of the effectiveness of a scripted lessons intervention (on a 0-4 scale) with the actual estimates from one of three studies ([Cilliers et al., 2016](#); [Jackson and Makarin, 2018](#); [Piper et al., 2018](#)).

Beliefs about potential effect of schooling on intelligence (“Growth mindset”)

Can education make people more intelligent, or is its main function to select or sort the brightest children for further education and elite jobs? We test policymaker beliefs about this proposition, by administering the three-item growth mindset scale (Dweck, 2000). Each official is asked the extent to which they agree or disagree that:

- a) *“You have a certain amount of intelligence, and you can’t really do much to change it”,*
- b) *“People’s intelligence is something that you can’t change very much”,* and
- c) *“People can learn new things, but you can’t really change basic intelligence”.*

Only around a third of respondents have a “growth mindset”, defined as disagreeing with the statement that intelligence is something you can’t change very much. Comparable cross-country data on the growth mindset of adults is not available, however the 2018 PISA survey asks 15-year olds one of these questions across 77 mostly high-income countries. 63 percent of these 15-year olds disagree that *“People’s intelligence is something that you can’t change very much”*. High levels of “fixed mindset” has also been found amongst teachers in low- and middle-income countries (Sabarwal et al., 2021).

Beliefs about labour market returns to schooling

Another factor that may explain policymakers’ support for investments in basic education versus secondary or vocational schooling is their perception of the market returns to these different schooling levels.

Do officials have accurate beliefs about the labour market benefits of schooling? Do these beliefs vary by student characteristics? We adopt a similar approach to Jensen (2010). Concretely, we ask respondents what they expect the average earnings to be for a hypothetical

child when they are age 30, depending on whether they complete primary school only, or primary and secondary school. Each respondent is asked for these two data points from four hypothetical children. The four children are either high or low intelligence, and from a rich or poor household. The order in which these options are presented is randomly assigned. We randomly assign each respondent to answer about either boys or girls. This allows us to calculate the expected returns to secondary school, and estimate how this varies by the intelligence and family income of the child.

The average policymaker estimate for the labour market returns to secondary schooling are between 93 percent for boys and 100 percent for girls (this difference is *not* statistically significant). The average actual returns based on Mincer regressions with household survey data are 63 percent for boys and 74 percent for girls (Table 5).

Table 5: Beliefs about Reality

	Mean(Beliefs)	Mean(Data)	SE(Beliefs)	N(Beliefs)	N(Data)
Global learning crisis (0/1)	.77	.	.42	932	.
National learning crisis (0/1)	.81	.	.39	932	.
10yr olds can read	47.12	24.49	23.19	729	33
Average schooling (Years)	10	9.01	3.7	810	33
Gov spend per child (USD)	177.6	188.08	194.7	624	29
Growth mindset (1-6)	3.55	.	1.6	880	.
LM Returns for Boys	92.79	57.98	74.56	396	22
LM Returns for Girls	99.37	71.55	89.68	151	24
Effect of Reading Program (0-4)	2.31	2.48	.97	884	35

Notes: Data on reading comes from the World Bank reading poverty indicator, and for schooling and spending from the World Bank Development Indicators. Data for labour market returns are drawn from [Montenegro and Patrinos \(2014\)](#). The effects of three reading programs described to respondents come from [Cilliers et al. \(2016\)](#), [Jackson and Makarin \(2018\)](#), and [Piper et al. \(2018\)](#). Further detail about the estimates of labour market returns is contained in Annex D and Table D1.

4.3 Beliefs about interventions to improve learning

Finally, support for investments in the quality of basic education may be limited by a perceived lack of effective policy levers. Do policymakers think that it is possible to improve foundational learning? We asked policymakers to estimate the effectiveness of a scripted lesson intervention on student learning. Scripted lessons are one of six “good buy” interventions recommended by a World Bank expert panel to improve learning in low- and middle-income countries (Global Education Evidence Advisory Panel, 2020)).

Each policymaker was asked to estimate the effect of one of three randomly selected studies that evaluate interventions providing detailed lesson guides (“scripted lessons”) for teachers. All three studies are randomized control trials. One study involved 50 schools in South Africa (Cilliers, Fleisch, Prinsloo and Taylor, 2016), one involved 170 schools in the United States (Jackson and Makarin, 2018), and one involved 800 schools in Kenya (Piper, Zuilkowski, Dubeck, Jepkemei and King, 2018). We translate effect sizes using the benchmarks reported by Kraft (2020). Therefore we classify the effects in South Africa (0.12σ) and the United States ($0.06 - 0.09\sigma$) to be *medium* effect sizes, and the effect sizes in Kenya ($0.38 - 1.29\sigma$) as being *very large*. We score a response of no effect as 0, small effect as 1, medium effect as 2, large effect as 3, and very large effect as 4. On this zero to four scale the mean response was 2.3 (a medium effect), close to the actual mean effect across the three studies of 2.48.

4.4 Explaining variation in policymaker preferences

We have discussed three categories of explanation for policymakers’ low preference for investments in foundational learning. How important are these potential explanations? In this section we present regression estimates of the correlates of individual policymaker preferences.

Our outcomes of interest are indices for the strength of policymaker preference for foundational learning and for TVET. The foundational learning preference is constructed using questions on sectoral priorities for new aid (Figure A5), and on the ranking of Sustainable Development Goals (Figure A6). The TVET preference is constructed using the same two questions, counting responses for TVET, employment skills, or skills for sustainable development as a preference for TVET.⁵

We then regress policy preferences on beliefs about reality (foundational learning levels and average schooling), about returns to interventions (labour market returns to schooling, growth mindset, and a scripted lessons interventions), and individual characteristics (Table 6).

A one standard deviation increase in beliefs about foundational learning levels is correlated with a lower preference for foundational learning (0.1σ) and a higher preference for TVET (0.14σ). There is no statistically significant correlation between preferences and beliefs about average schooling, about the labour market returns to schooling, about growth mindset, or about the effectiveness of scripted lessons. Men have a lower preferences for foundational learning than women (0.16σ), and officials who work in a dedicated TVET agency have a much stronger preference for TVET (0.65σ). One theory is that preferences for marginal aid spending may reflect the existing distribution of aid spending. To test this, we calculate the share of education aid spending in each country that goes on TVET, based on data from the OECD Creditor Reporting System (CRS). The share of education aid to TVET in the countries in our sample varies between two percent in Angola to 38 percent in Rwanda. There is a positive but statistically insignificant correlation between this share and preferences for further TVET spending. Countries with higher university graduate unemployment rates have *lower* preferences for both TVET and foundational learning.

⁵Specifically, we construct three indicator variables for each question, indicating whether the individual rated that item as their first, second, or third priority. We then calculate a principal components index of all indicator variables, and standardise this index to mean zero, standard deviation one.

Table 6: Explaining Spending Preferences

	FLN		TVET	
	(1)	(2)	(3)	(4)
<i>Beliefs about reality:</i>				
Foundational Learning (z-score)	-0.0842*	-0.0739*	0.136**	0.147**
	(0.0438)	(0.0426)	(0.0569)	(0.0617)
Average schooling (years)	-0.00136	0.00190	0.00144	-0.00963
	(0.0151)	(0.0165)	(0.0209)	(0.0228)
LM Returns (z-score)	0.0253	0.0273	0.0236	0.0362
	(0.0332)	(0.0366)	(0.0532)	(0.0517)
Growth Mindset (1-6 score)	0.0124	0.0167	0.0435	0.0549
	(0.0301)	(0.0294)	(0.0503)	(0.0474)
<i>Beliefs about interventions:</i>				
Scripted lessons (0-4 scale)	0.0591	0.0165	-0.0713	-0.0575
	(0.0616)	(0.0671)	(0.0648)	(0.0469)
<i>Respondent Characteristics:</i>				
Male		-0.190**		0.0556
		(0.0706)		(0.0789)
TVET/Skills Ministry/Agency		-0.175		0.629***
		(0.170)		(0.201)
<i>Country Characteristics:</i>				
Share of aid on TVET		-0.102		0.401
		(0.597)		(0.995)
Graduate Unemployment Rate		-0.0370**		-0.0412**
		(0.0146)		(0.0200)
Region FE	Yes	Yes	Yes	Yes
Obs.	786	680	786	680
R ²	0.02	0.06	0.03	0.12

Note: The outcome variable is an index summarising the strength of individual preference for foundational learning or for TVET. We show results for the individual components of this index in Table B2 and Table B3. Standard errors are clustered at the country level.

* p<0.1, ** p<0.05, *** p<0.01

5 Experimental evidence on changing beliefs

Do research findings change people’s minds? In this section we report on the results of the information experiment involving scripted lessons mentioned earlier. In this experiment we seek to understand how and whether research findings influence policy views.

We use an identical vignette describing the study set up, but randomly vary the study details that are revealed – specifically the country that the study was conducted in, the number of schools involved in the study, and whether we mention that the study was a randomized control trial or not. Officials were first asked for their prior on the effect size of the study. We then provide evidence on the actual effect of the study. After revealing what the effect size actually was, we estimate posterior beliefs by asking the official what they think the effect size would be if the project was replicated in their country. We then calculate whether or not officials update their beliefs towards the true value, as the difference between (a) the absolute gap between the true effect and the posterior belief, and (b) the absolute gap between the true effect and the prior. For example, someone who was presented the South Africa study (with a medium effect size, or 2 points) and whose prior was a large effect (3 points) would have a prior gap of one point. If after being presented the true effect they updated their estimate for a replication in their context to be a medium effect (2 points), the gap would have reduced by one point, and they are classed as having updated towards the evidence presented.

$$Update = |TrueEffect - Prior| - |TrueEffect - Posterior| \quad (2)$$

31 percent of officials correctly estimate the true effect size of the study that they are presented with. 64 percent of officials do not change their belief after receiving the new information at all. 15 percent update their belief in the direction of the evidence presented.

22 percent *increase* the gap between their prior estimate and the true value. We create a binary indicator for whether or not someone updated their belief, and estimate the following equation with a linear OLS regression:

$$Update = \beta_1 RCT + \beta_2 StudySize + \beta_3 DevelopingCountry + \epsilon \quad (3)$$

Studies from a developing country (South Africa or Kenya) increased the chance of the official updating their beliefs towards the effect found in the study, by around five percentage points (Table 7). This is consistent with our expectation that evidence from a similar low- or middle-income country context is considered more relevant than evidence from a high-income country. Revealing that the study was an RCT has no effect on the probability of updating beliefs towards the true effect found in the study. The coefficient is negative, and we are able to rule out positive effects of larger than two percentage points. A study that is 100 schools larger increases the chance of belief updating, by two percentage points. These results support the notion that evidence from a relevant context is more likely to change minds than evidence from a randomized control trial in a less relevant context, and that larger studies are more likely to change minds. One possibility is that officials in countries where more RCTs have been conducted might be more familiar with the value of the method, and more likely to place greater weight on evidence from an RCT. To test this possibility we measure the number of RCTs completed in each country, using data from the American Economic Association’s social science registry (www.socialscienceregistry.com). This varies between zero in Angola, Comores, DRC, Gabon, Haiti, and Vanuatu, to 78 in Kenya. Respondents from the four countries with more than 30 completed RCTs (Bangladesh, Kenya, Malawi, Uganda) are less likely to update their views in general. The coefficient on the interaction term between having 30 or more completed RCTs and being presented with RCT evidence is positive but not statistically significant.

Table 7: Effect of study characteristics on Belief Updating

	(1)	(2)	(3)	(4)
	Full	Exc Kenya/SA	Full	Full
<i>Study Characteristics:</i>				
Study was RCT	-0.019 (0.022)	-0.015 (0.023)	-0.017 (0.023)	-0.022 (0.024)
N of schools (100s)	0.022*** (0.004)	0.022*** (0.005)	0.022*** (0.004)	0.022*** (0.004)
Developing Country	0.051** (0.023)	0.046* (0.023)	0.049** (0.023)	0.049** (0.023)
<i>Country Characteristics:</i>				
Country has 30+ RCTs			-0.124*** (0.037)	-0.158*** (0.050)
RCT X 30+ RCTs				0.066 (0.081)
Obs.	879	851	879	879
R ²	0.044	0.044	0.053	0.053
Baseline Mean	0.16	0.16	0.16	0.16

Note: The outcome variable is a binary indicator for whether or not the respondent updated their prior belief in the direction of the revealed study effect size. "Developing Country" is a dummy variable with value 1 if the reported study was in Kenya or South Africa and 0 if in the United States. Column (2) excludes officials from Kenya and South Africa as they are the study countries. Controls include respondent sex, experience, agency, job title, world region, and government level (national or subnational). Standard errors are clustered at the country level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

6 Conclusion

In this paper we present new data on the policy preferences of civil servants working on education in low- and middle-income countries. Whilst many global elites increasingly focus on the importance of foundational literacy and numeracy, national civil servants have stronger preferences for technical and vocational education, and for the socialization role of education. These differences in priorities can in part be attributed to a gap in the understanding of officials about the scale of the challenge in foundational literacy. We also show that presenting contextually relevant research evidence to officials can change their beliefs about the effectiveness of an intervention to improve learning.

Policymakers in donor agencies and international organisations could draw two quite different lessons from our findings.

First, that existing efforts to convey messages about the learning crisis have not yet fully succeeded, and so efforts should be redoubled. We found that officials who could more accurately estimate (low) learning levels were more likely to prioritize foundational literacy. Investment in more research that informs policy makers about the actual status of schools in their country might help correct their overestimation of learning levels and increase their support for foundational literacy. This could include simply better presentation and communication of existing research - many respondents in our sample vastly over-estimated learning levels despite there being multiple national learning assessments published in their country. We show that a majority of officials do not have a growth mindset and may not believe that all children have the ability to learn. To achieve universal foundational literacy, donors should explore ways to alter this perception.

Second, and alternatively, that developing country governments have a preference for projects focused on technical and vocational education. And so more efforts should be put

into identifying and supporting effective models. Donors who are committed to principles of “country ownership” must grapple with the fact that countries have legitimate education goals beyond basic skills, e.g. jobs and political cohesion. Our findings on evidence use support a case for more localized research. Officials are more likely to update their beliefs when presented with evidence from another low- or middle-income country. They were more likely to update their beliefs if the study had a large sample size. However, the study being an RCT had no effect on their likelihood of updating beliefs toward the true effect size of the study. Our findings suggest we should have less confidence that the findings of a single RCT will be accepted globally. Researchers could work more closely with officials and policy makers to design studies that are more likely to convince them to update their beliefs.

Future research could usefully expand to more countries, or more topics that are of particular interest to major donors, such as girl’s education. It could also expand to other officials and policy makers responsible for making and implementing policy, e.g. Members of Parliament and District Education Officers; or officials responsible for investing in social sectors, e.g. officials at the Ministry of Finance. Understanding better the knowledge, perceptions and priorities of officials and policy makers in aid-recipient countries could help donors optimize the impact of aid money.

There is more to be learnt about the conditions under which rigor and external validity play a role in how policymakers are influenced by evidence. Researchers generally want their work to have an impact in the real world. For this to happen, officials and policy makers need to be able to access research and to be convinced that it is sufficiently credible and relevant to change their minds and inform policy. While there has been an emerging literature on this topic in recent years, more rigorous work – including with officials and policy makers in low- and middle-income countries – could make research more relevant to officials and policy makers and ultimately have more impact.

References

- Baekgaard, Martin, Jens Blom-Hansen, and Søren Serritzlew**, “When Politics Matters: The Impact of Politicians’ and Bureaucrats’ Preferences on Salient and Nonsalient Policy Areas: When Politics Matters,” *Governance*, October 2015, 28 (4), 459–474.
- Bandiera, Oriana, Myra Mohnen, Imran Rasul, and Martina Viarengo**, “Nation-building Through Compulsory Schooling during the Age of Mass Migration,” *The Economic Journal*, 12 2018, 129 (617), 62–109.
- Banuri, Sheheryar, Stefan Dercon, and Varun Gauri**, “Biased Policy Professionals,” *The World Bank Economic Review*, 07 2019, 33 (2), 310–327.
- Beeharry, Girindre**, “The pathway to progress on SDG 4 requires the global education architecture to focus on foundational learning and to hold ourselves accountable for achieving it,” *International Journal of Educational Development*, 2021, 82, 102375.
- Bill and Melinda Gates Foundation**, “Global Education Program,” 2021. accessed on 18 Jan 2021.
- Blattman, Christopher and Edward Miguel**, “Civil war,” *Journal of Economic literature*, 2010, 48 (1), 3–57.
- Bold, Tessa, Deon Filmer, Gayle Martin, Ezequiel Molina, Brian Stacy, Christophe Rockmore, Jakob Svensson, and Waly Wane**, “Enrollment without Learning: Teacher Effort, Knowledge, and Skill in Primary Schools in Africa,” *Journal of Economic Perspectives*, November 2017, 31 (4), 185–204. ZSCC: 0000100.
- Briggs, Ryan C**, “Why Does Aid Not Target the Poorest?,” *International Studies Quarterly*, 05 2021. sqab035.

Cantoni, Davide, Yuyu Chen, David Y. Yang, Noam Yuchtman, and Y. Jane Zhang, “Curriculum and Ideology,” *Journal of Political Economy*, 2017, 125 (2), 338–392.

Cilliers, Jacobus, Brahm Fleisch, Cas Prinsloo, and Stephen Taylor, “Scripted lesson plans and improving early-grade reading: Experimental evidence from South Africa,” 2016.

Das, Jishnu, Alaka Holla, Aakash Mohpal, and Karthik Muralidharan, “Quality and Accountability in Health Care Delivery: Audit-Study Evidence from Primary Care in India,” *American Economic Review*, December 2016, 106 (12), 3765–3799.

DFID, “DFID Education policy: get children learning,” 2018, p. 46.

Dweck, Carol S, *Self-theories: Their role in motivation, personality, and development*, Psychology press, 2000.

Global Education Evidence Advisory Panel, “Cost-effective Approaches to Improve Global Learning Levels,” Technical Report, UK Foreign, Commonwealth & Development Office (FCDO); World Bank; Building Evidence in Education Global Group (BE2) October 2020.

Hares, Susannah and Jack Rossiter, “The State of Global Education Finance in Six Charts,” 2019.

Hjort, Jonas, Diana Moreira, Gautam Rao, and Juan Francisco Santini, “How Research Affects Policy: Experimental Evidence from 2,150 Brazilian Municipalities,” *American Economic Review*, 2021.

- Horiuchi, Yusaku, Zachary Markovich, and Teppei Yamamoto**, “Does Conjoint Analysis Mitigate Social Desirability Bias?,” *Political Analysis*, 2021, pp. 1–15. Publisher: Cambridge University Press.
- Jackson, Kirabo and Alexey Makarin**, “Can online off-the-shelf lessons improve student outcomes? Evidence from a field experiment,” *American Economic Journal: Economic Policy*, 2018, *10* (3), 226–54.
- Jensen, Robert**, “The (Perceived) Returns to Education and the Demand for Schooling,” *Quarterly Journal of Economics*, May 2010, *125* (2), 515–548.
- Knack, Stephen, Bradley C Parks, Ani Harutyunyan, and Matthew DiLorenzo**, “How Does the World Bank Influence the Development Policy Priorities of Low-Income and Lower-Middle Income Countries?,” Policy Research Working Paper 2020.
- Kraft, Matthew A**, “Interpreting effect sizes of education interventions,” *Educational Researcher*, 2020, *49* (4), 241–253.
- Lee, Nathan**, “Do Policymakers Listen To Experts? Evidence from a National Survey of Local and State Policymakers,” Working Paper 2020.
- Leeper, Thomas J., Sara B. Hobolt, and James Tilley**, “Measuring Subgroup Preferences in Conjoint Experiments,” *Political Analysis*, April 2020, *28* (2), 207–221.
- Liu, Xinsheng, James Stoutenborough, and Arnold Vedlitz**, “Bureaucratic expertise, overconfidence, and policy choice,” *Governance*, 2017, *30* (4), 705–725. eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/gove.12257>.
- Masset, Edoardo, Marie Gaarder, Penelope Beynon, and Christelle Chapoy**, “What is the impact of a policy brief? Results of an experiment in research dissemination,”

- Journal of Development Effectiveness*, March 2013, 5 (1), 50–63. Publisher: Routledge
 .eprint: <https://doi.org/10.1080/19439342.2012.759257>.
- McFadden, Daniel**, *Conditional logit analysis of qualitative choice behavior*, Institute of Urban and Regional Development, University of California, 1973.
- Montenegro, Claudio E. and Harry Anthony Patrinos**, “Comparable estimates of returns to schooling around the world,” Technical Report WPS7020, The World Bank September 2014.
- Muralidharan, Karthik and Abhijeet Singh**, “India’s new National Education Policy: Evidence and challenges,” *Science*, 2021, 372 (6537), 36–38.
- Nakajima, Nozomi**, “Evidence-Based Decisions and Education Policymakers,” Working Paper 2021.
- OECD**, *Development Co-operation Report 2017* 2017.
- Paglayan, Agustina S.**, “The Non-Democratic Roots of Mass Education: Evidence from 200 Years,” *American Political Science Review*, 2021, 115 (1), 179–198.
- Piper, Benjamin, Stephanie Simmons Zuilkowski, Margaret Dubeck, Evelyn Jekemei, and Simon J King**, “Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers’ guides,” *World Development*, 2018, 106, 324–336.
- Pritchett, Lant and Martina Viarengo**, “The State, Socialisation, and Private Schooling: When Will Governments Support Alternative Producers?,” *The Journal of Development Studies*, 2015, 51 (7), 784–807.

Redfern, Alice, Martin Gould, Maryanne Chege, Sindy Li, and William Slotznick, “Beneficiary Preferences: Findings from Ghana and Kenya,” Technical Report, IDInsight 2019.

Rogger, Daniel and Ravi Somani, “Hierarchy and Information,” Policy Research Working Paper, World Bank 2018.

Sabarwal, Shwetlena, Malek Abu-Jawdeh, and Radhika Kapoor, “Teacher Beliefs: Why They Matter and What They Are,” *The World Bank Research Observer*, June 2021, (lkab008).

Smets, Lodewijk, “Supporting Policy Reform from the Outside,” *The World Bank Research Observer*, 10 2019, 35 (1), 19–43.

Solomon, Samuel and Andrew Zeitlin, “What Do Tanzanian Parents Want from Primary Schools and What Can Be Done about It?,” Technical Report, RISE Insights 2019.

The International Commission on Financing Global Education Opportunity, “The Learning Generation: Investing in education for a changing world,” 2016.

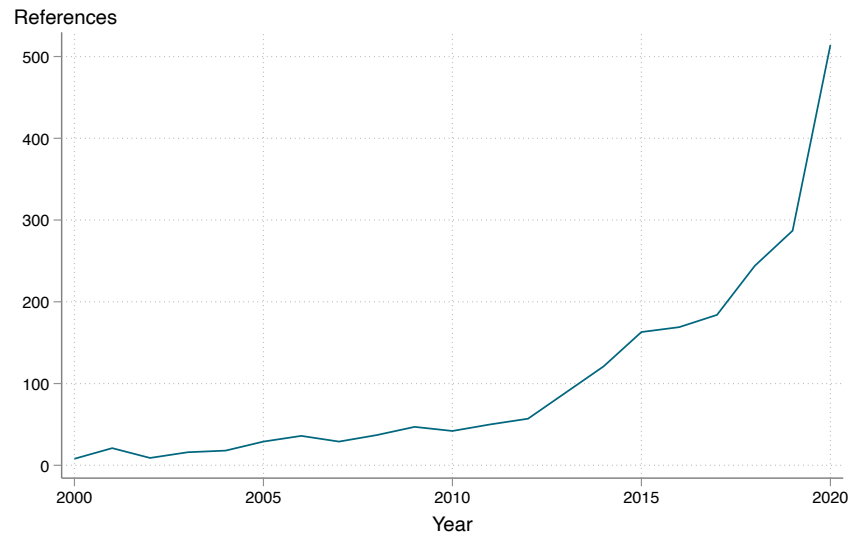
USAID, “USAID Education Policy,” November 2018.

Vivalt, Eva, Aidan Coville, and Sampada Kc, “Weighing the Evidence: Which Studies Count?,” 2021, p. 36.

— **and** — , “How Do Policymakers Update Their Beliefs?,” 2020.

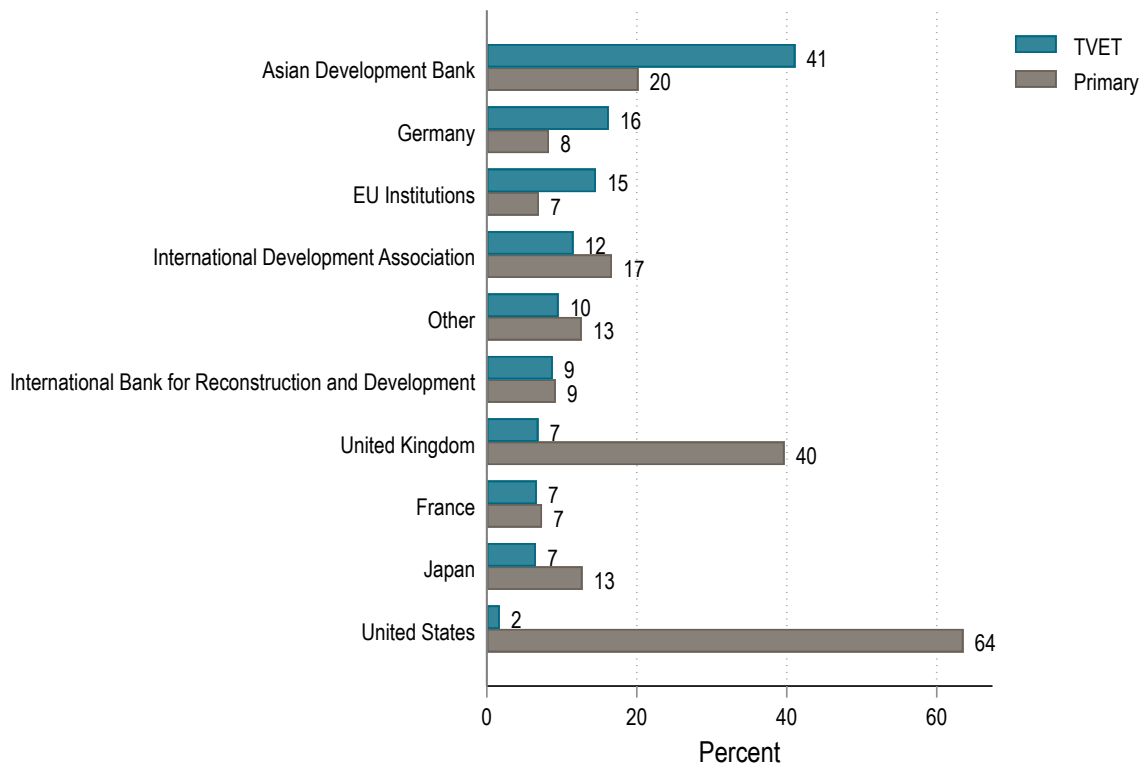
A Appendix: Additional Figures

Figure A1: Academic publications per year mentioning ‘Learning crisis’



Note: Search results from Google Scholar, per year.

Figure A2: Aid Spending Varies Significantly



Note: This figure shows the share of all spending on education aid that goes on technical or vocational education (TVET), at either secondary or tertiary level, or on primary schooling, by donor. The nine largest donors to education are shown independently, with all other donors included in the "Other" category. Data is from the 2019 OECD Creditor Reporting System (CRS) database.

Figure A3: Aid is a low share of all public spending on education

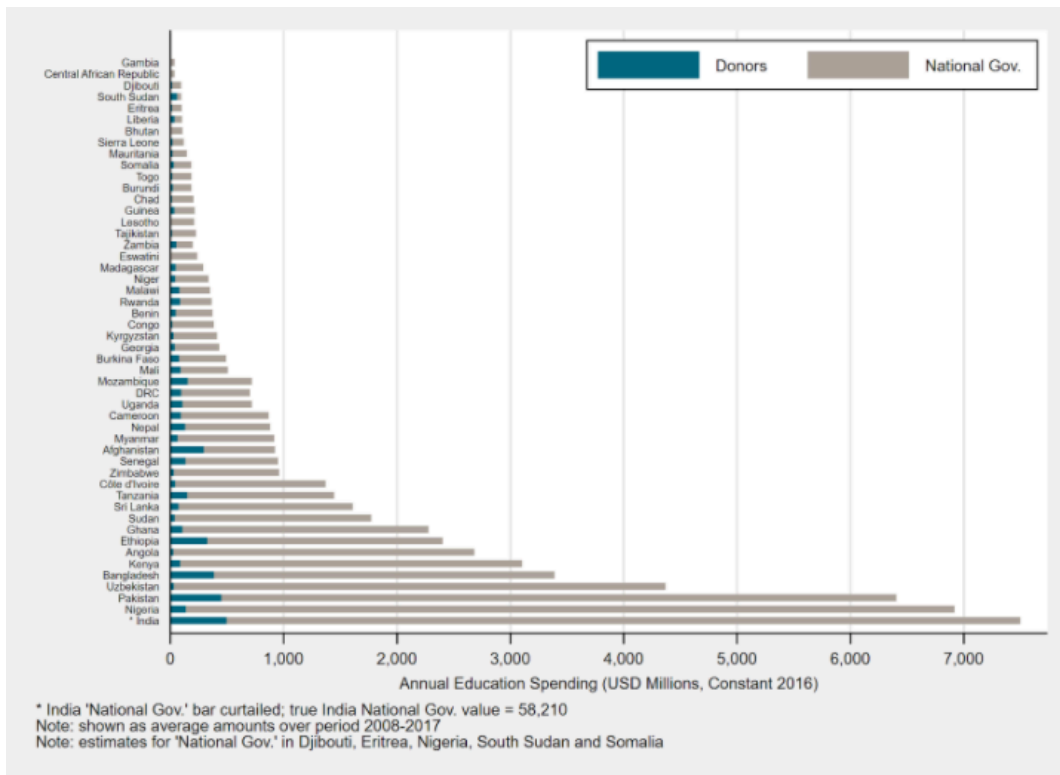
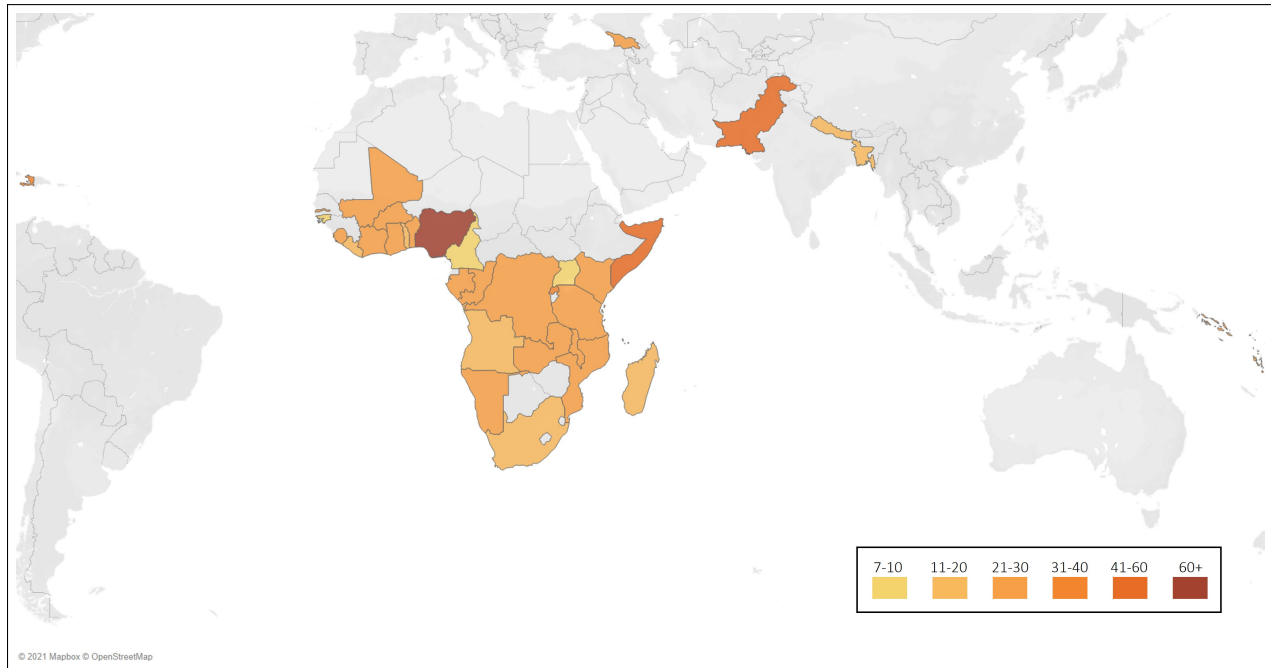
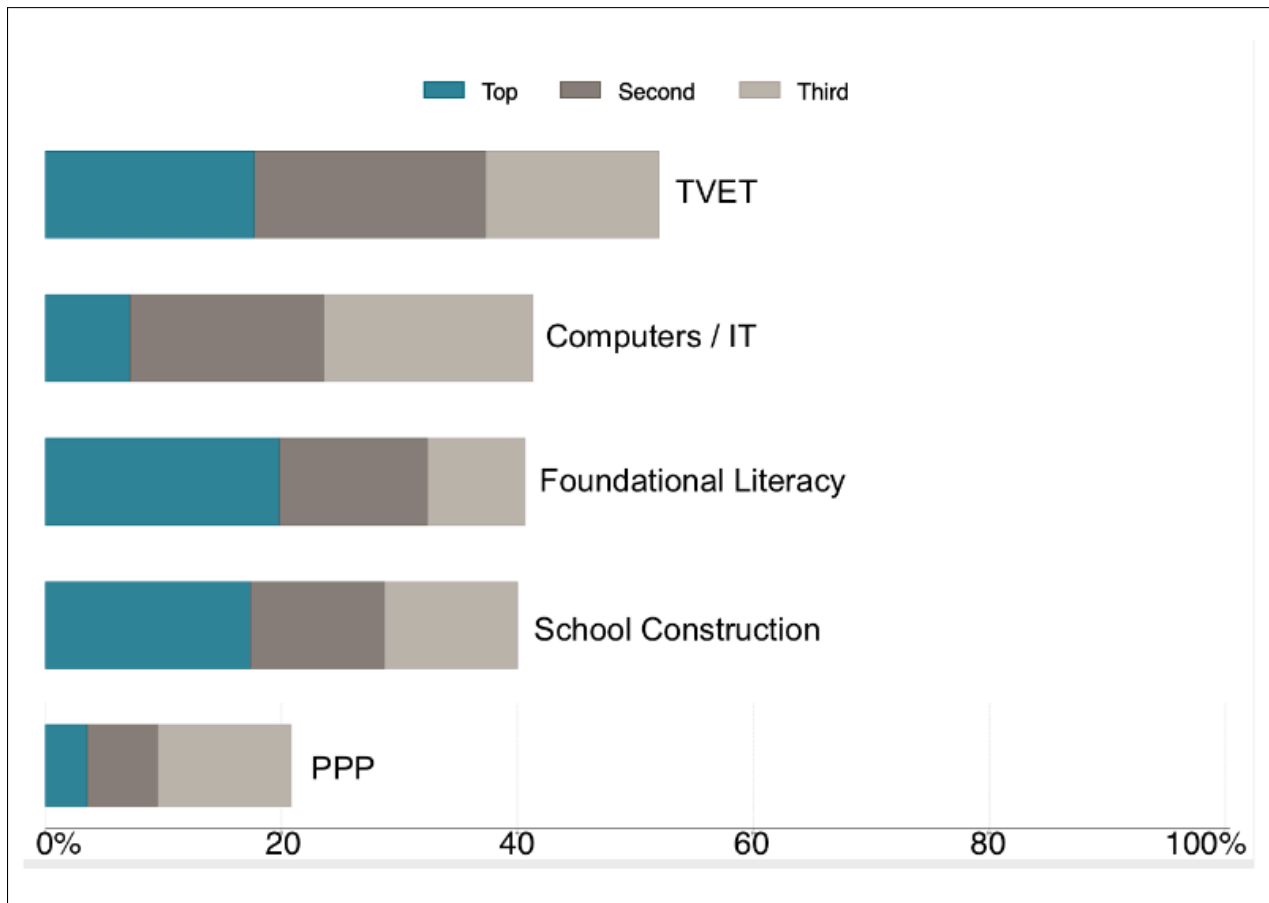


Figure A4: Country sample size map



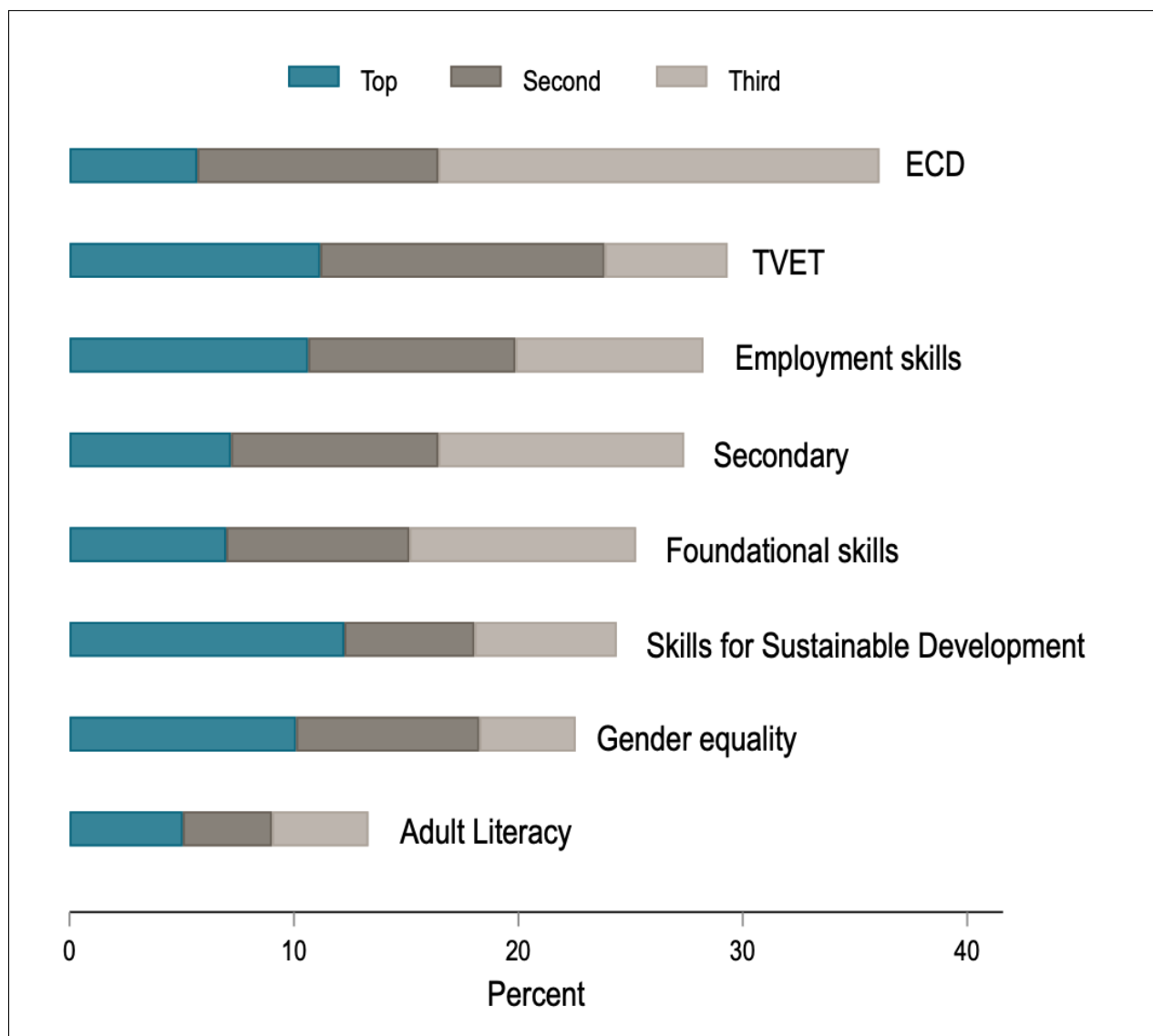
Note: The full list of sampled countries is Gambia, Liberia, Malawi, Sierra Leone, Tanzania, Uganda, Benin, Burkina Faso, DRC, Madagascar, Mali, Rwanda, Togo, Nepal, Guinea-Bissau, Haiti, Mozambique, Somalia, Ghana, Kenya, Nigeria, Zambia, Cameroon, Comoros, Congo, Cote d'Ivoire, Bangladesh, Pakistan, Solomon Islands, Vanuatu, Angola, Namibia, South Africa, Gabon, and Georgia

Figure A5: Stated policy priorities



Note: The question asked was: *What would your priorities be for any new additional aid spending? Please select your top 3*

Figure A6: Which are the three most important Sustainable Development Goals?



Note: There are several targets associated with the United Nations Sustainable Development Goal on Education (SDG 4). Which 3 are most important for your country?

Figure A7: Reforms officials view as most important

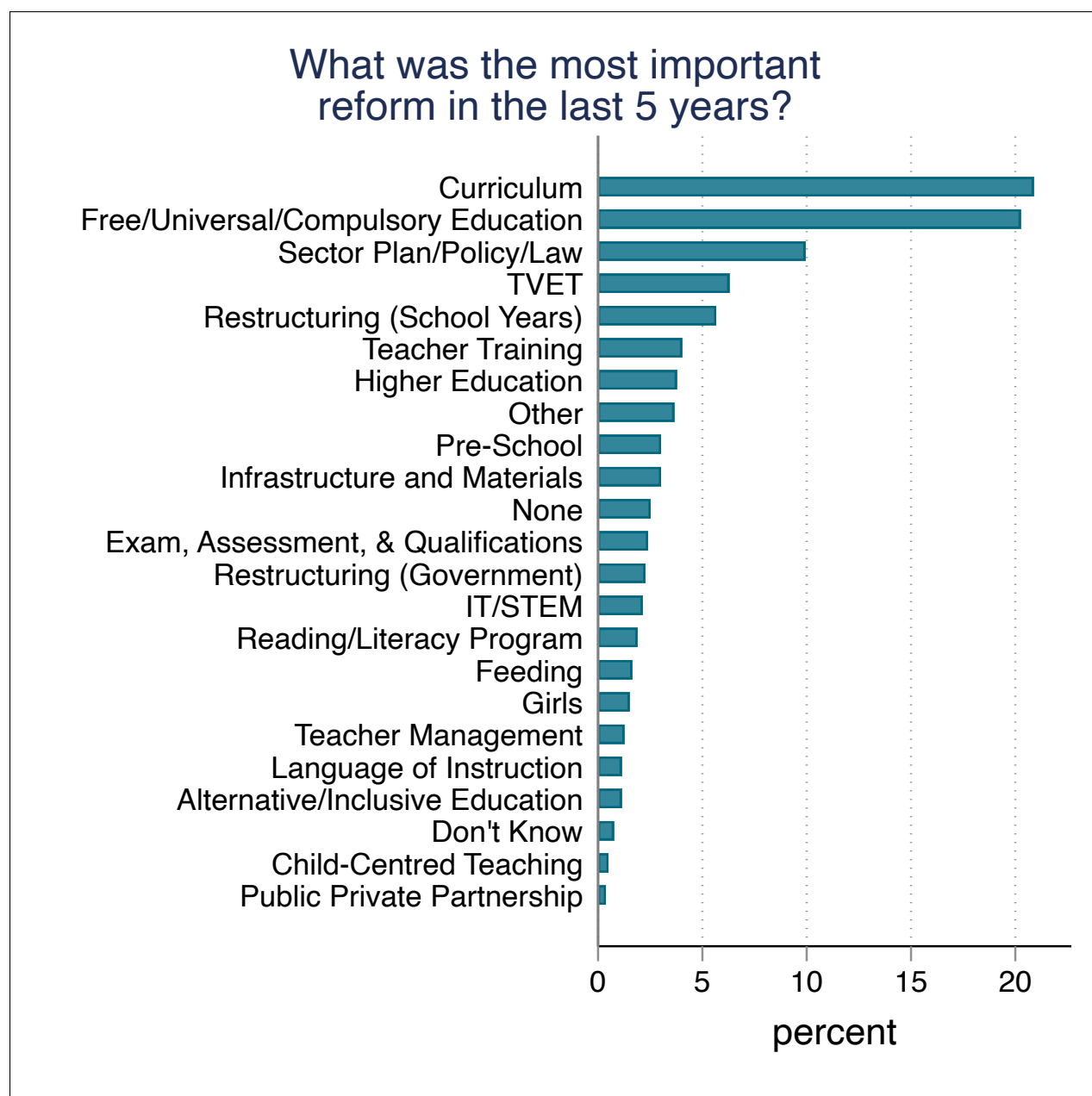


Figure A8: Discrete choice experiment - example screen

The figure displays two smartphone screens from a discrete choice experiment. Both screens show a language dropdown menu set to 'English' and a progress indicator.

Left Screen (1/6): The text reads: "(1/6) Now I am going to ask you about some hypothetical aid projects. I am going to describe two aid projects and ask you to choose which one you would prefer." Below the text is a table with four columns: Project 1, Project 2, and None. The rows are Project, Technical Assistance, and Budget.

	Project 1	Project 2	None
Project	Technical and Vocational Education	Foundational literacy	None of these options
Technical Assistance	1 Full-time Technical Advisor	1 Full-time Technical Advisor	
Budget	\$40 million	\$30 million	

A blue 'Next' button is at the bottom right, and the text 'Powered by Qualtrics' is at the bottom center.

Right Screen (1/4): The text reads: "(1/4) There are multiple possible goals of an education system - to provide everyone with basic skills such as literacy, to create dutiful citizens, or to identify the brightest children and prepare them for leadership roles. Imagine you had to choose between the outcomes of two education systems, which do you prefer?" Below the text is a table with four columns: System 1, System 2, and None. The rows are Gain foundational literacy (%), Complete secondary school (%), and Dutiful citizens (%).

	System 1	System 2	None
Gain foundational literacy (%)	100	80	None of these options
Complete secondary school (%)	50	30	
Dutiful citizens (%)	80	90	

Note: The values shown here are illustrative examples. The features of each project and system are randomly generated for each choice. Each official faces six randomly generated choices. In each case, the project can be either a) School construction, b) Foundational literacy, c) Learning Assessment, d) Computers / Technology, or e) Technical and Vocational Education. The Technical Assistance can consist of a) None, b) 1 Full-time Technical Advisor, or c) 2 Full-time Technical Advisors. The Budget can consist of \$30 million, \$32 million, \$35 million, \$37 million, or \$40 million.

B Appendix: Additional Tables

Table B1: Balance test on shortlisted and additional respondents

Variable	(1) Additional		(2) Original list		T-test
	N	Mean/SE	N	Mean/SE	Difference (1)-(2)
Male	235	0.71 (0.03)	680	0.74 (0.02)	-0.03
Years of experience	216	13.33 (0.69)	663	14.57 (0.46)	-1.24
Agency is Ministry of Education	248	0.56 (0.03)	684	0.70 (0.02)	-0.14***
Is a director or an assistant/deputy director	248	0.45 (0.03)	684	0.60 (0.02)	-0.15***

Notes: The value displayed for t-tests are the differences in the means across the groups. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B2: Explaining Policy Preferences

	Foundational	TVET	Empl	Skills	Adult	Gender	ECD	USE
<i>Beliefs about reality:</i>								
Foundational Learning	-0.0311 (0.0187)	0.0496* (0.0255)	0.0346 (0.0234)	0.0283* (0.0146)	0.000694 (0.0169)	0.00470 (0.0183)	0.0491** (0.0219)	0.0431** (0.0161)
Average schooling (years)	0.000989 (0.00630)	0.00143 (0.00604)	-0.00229 (0.00861)	-0.00357 (0.00743)	-0.000649 (0.00367)	-0.0103 (0.00739)	0.00274 (0.00775)	0.00665 (0.00729)
LM Returns (z-score)	0.0188 (0.0157)	0.0187 (0.0241)	-0.0170 (0.0179)	0.0220 (0.0187)	0.00529 (0.0113)	-0.0252* (0.0135)	0.00189 (0.0162)	-0.0425** (0.0190)
Growth Mindset (1-6 score)	0.000648 (0.0116)	0.00529 (0.0147)	0.00189 (0.0170)	0.0382*** (0.0135)	-0.00902 (0.00945)	0.0156 (0.0150)	0.0204 (0.0143)	0.0141* (0.00781)
<i>Beliefs about interventions:</i>								
Scripted lessons (0-4 scale)	0.0103 (0.0275)	-0.00982 (0.0227)	-0.0146 (0.0214)	-0.0186 (0.0154)	-0.00217 (0.0127)	0.0130 (0.0231)	0.0176 (0.0312)	-0.0409** (0.0183)
<i>Respondent Characteristics:</i>								
Male	-0.0808** (0.0350)	-0.0312 (0.0362)	0.0361 (0.0494)	0.0234 (0.0354)	-0.0292 (0.0290)	-0.0555* (0.0298)	0.0211 (0.0293)	-0.0175 (0.0262)
TVET Agency	-0.0543 (0.0784)	0.171* (0.0907)	0.295*** (0.0737)	0.0764 (0.0556)	0.0370 (0.0573)	0.0485 (0.0728)	-0.167** (0.0727)	0.0899 (0.0759)
<i>Country Characteristics:</i>								
Share of aid on TVET	-0.0783 (0.244)	-0.224 (0.353)	-0.224 (0.416)	0.574** (0.255)	-0.171 (0.243)	-0.573 (0.341)	0.264 (0.254)	0.577** (0.241)
Grad unemployment	-0.0144** (0.00554)	-0.0110* (0.00593)	-0.00895 (0.00684)	-0.0148** (0.00584)	-0.00453 (0.00354)	-0.0151** (0.00608)	-0.0191** (0.00824)	-0.0126** (0.00513)
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Outcome Mean	0.25	0.26	0.28	0.26	0.12	0.22	0.34	0.27
Obs.	680	680	680	680	680	680	680	680
R ²	0.05	0.05	0.08	0.09	0.02	0.08	0.11	0.13

Note: The outcome variable is a binary indicator taking the value 0 or 1 for whether the respondent chose each Sustainable Development Goal as one of the top three priorities for their country. The seven Sustainable Development Goals in education cover technical and vocational education (TVET), employment skills, skills for sustainable development, adult literacy, gender equality, early child development services (ECD), or universal secondary education (USE). In addition these seven, we offered respondents the option to select foundational skills, which is one of the sub-indicators for the goals. Standard errors are clustered at the country level.

* p<0.1, ** p<0.05, *** p<0.01

Table B3: Explaining Aid Spending Preferences

	Foundational	TVET	Construction	PPP	Computers
<i>Beliefs about reality:</i>					
Foundational Learning	0.00223 (0.0341)	0.0121 (0.0310)	0.0435 (0.0277)	0.00892 (0.0194)	0.0405 (0.0316)
Average schooling (years)	-0.00423 (0.00892)	0.000533 (0.00995)	0.00981 (0.00971)	-0.00518 (0.00461)	0.00357 (0.0100)
LM Returns (z-score)	-0.0217 (0.0266)	0.0398* (0.0226)	0.0121 (0.0199)	0.0106 (0.0141)	-0.0212 (0.0218)
Growth Mindset (1-6 score)	0.0308 (0.0213)	0.00898 (0.0231)	0.00594 (0.0158)	0.0179 (0.0115)	0.0199 (0.0216)
<i>Beliefs about interventions:</i>					
Scripted lessons (0-4 scale)	0.0156 (0.0248)	-0.0276 (0.0270)	0.00364 (0.0326)	-0.0102 (0.0257)	-0.0179 (0.0263)
<i>Respondent Characteristics:</i>					
Male	-0.0813** (0.0307)	0.0159 (0.0355)	-0.0487 (0.0348)	0.0559 (0.0361)	-0.0495 (0.0371)
TVET Agency	-0.0247 (0.0869)	0.210** (0.0901)	0.0259 (0.0823)	0.120** (0.0507)	0.250*** (0.0615)
<i>Country Characteristics:</i>					
Share of aid on TVET	0.119 (0.373)	0.345 (0.467)	0.525 (0.347)	-0.0786 (0.250)	0.0302 (0.347)
Grad unemployment	-0.0177** (0.00834)	-0.0209* (0.0111)	-0.0267*** (0.00829)	-0.000443 (0.00408)	-0.0136 (0.00816)
Region FE	Yes	Yes	Yes	Yes	Yes
Outcome Mean	0.41	0.51	0.40	0.20	0.43
Obs.	680	680	680	680	680
R ²	0.06	0.10	0.11	0.04	0.08

Note: The outcome variable is an index summarising the strength of individual preference for foundational learning or for TVET. Standard errors are clustered at the country level.

* p<0.1, ** p<0.05, *** p<0.01

Table B4: Conjoint Experiment Results: Aid Project Preferences (Logit Model)

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
choice				
Budget (USD million)	0.0469*** (0.00683)	0.0494*** (0.00706)	0.0193 (0.0295)	0.0533*** (0.00733)
Technical Advisors	0.147*** (0.0320)	0.151*** (0.0326)	0.377** (0.161)	0.129*** (0.0335)
TVET	0.495*** (0.0794)	0.457*** (0.0809)	1.175*** (0.294)	0.421*** (0.0845)
Assessment	0.0848 (0.0805)	0.0672 (0.0825)	0.556 (0.352)	0.0217 (0.0860)
Foundational Literacy	-0.0238 (0.0836)	-0.0449 (0.0862)	0.185 (0.362)	-0.0483 (0.0895)
School Construction	0.0838 (0.0776)	0.0683 (0.0799)	0.803*** (0.304)	0.0217 (0.0841)
Controls		Yes	Yes	Yes
Obs. (Responses)	8,558	8,078	556	7,414
Obs. (Respondents)	733	690	47	634
Pseudo R ²	0.011	0.011	0.043	0.011

Note: The omitted category for projects is compared to an IT project. Controls include years of experience, gender, job title, agency and country fixed effect.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

Table B5: Conjoint Experiment Results: Aid Project Preferences Marginal Effects of Logit Model)

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
Budget (USD million)	0.0115*** (0.0017)	0.0121*** (0.0017)	0.0045 (0.0069)	0.0131*** (0.0018)
Technical Advisors	0.0361*** (0.0078)	0.0370*** (0.0080)	0.0886** (0.0366)	0.0318*** (0.0082)
TVET	0.1219*** (0.0193)	0.1125*** (0.0197)	0.2763*** (0.0661)	0.1036*** (0.0206)
Assessment	0.0209 (0.0198)	0.0165 (0.0203)	0.1308 (0.0818)	0.0053 (0.0212)
Foundational Literacy	-0.0059 (0.0206)	-0.0110 (0.0212)	0.0435 (0.0853)	-0.0119 (0.0220)
School Construction	0.0206 (0.0191)	0.0168 (0.0197)	0.1890*** (0.0696)	0.0054 (0.0207)
Observations	8558	8078	556	7414

Note: The omitted category for projects is compared to an IT project. Controls include years of experience, gender, job title, agency and country fixed effect.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

Table B6: Conjoint Experiment Results: Education Outcomes Preferences (Logit Model)

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
choice				
% with Foundational Literacy	0.0281*** (0.00190)	0.0285*** (0.00197)	0.0201*** (0.00738)	0.0293*** (0.00205)
% Completing Secondary School	0.0322*** (0.00196)	0.0329*** (0.00205)	0.0394*** (0.00783)	0.0323*** (0.00215)
% Dutiful Citizens	0.0414*** (0.00276)	0.0415*** (0.00288)	0.0396*** (0.00965)	0.0414*** (0.00304)
Controls		Yes	Yes	Yes
Obs. (Responses)	6,730	6,366	526	5,760
Obs. (Respondents)	853	806	66	730
Pseudo R ²	0.104	0.106	0.106	0.106

Note: Controls include years of experience, gender, job title, agency and country fixed effect.

* p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses.

Table B7: Conjoint Experiment Results: Education Outcomes Preferences (Marginal Effects of Logit Model)

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
% with Foundational Literacy	0.0061*** (0.0004)	0.0061*** (0.0004)	0.0043*** (0.0015)	0.0063*** (0.0004)
% Completing Secondary School	0.0070*** (0.0004)	0.0071*** (0.0004)	0.0085*** (0.0014)	0.0069*** (0.0004)
% Dutiful Citizens	0.0089*** (0.0006)	0.0089*** (0.0006)	0.0085*** (0.0019)	0.0089*** (0.0006)
Observations	6730	6366	526	5760

Note: Controls include years of experience, gender, job title, agency and country fixed effect.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

C Appendix: Results omitting additional sample

As discussed in section 2, our initial sample frame contained 1,056 potential respondents, of whom 684 were successfully interviewed (65 percent). An additional 247 interviews were conducted with respondents who were not on the initial lists, but did meet the criteria for interview, for a total of 931 interviews. In this Appendix we show that our main results are robust to omitting the additional 247.

Table C1: Beliefs about Reality

	Mean(Beliefs)	Mean(Data)	SE(Beliefs)	N(Beliefs)	N(Data)
Global learning crisis (0/1)	.76	.	.43	481	.
National learning crisis (0/1)	.8	.	.4	481	.
10yr olds can read	50.69	26.6	23.25	364	27
Average schooling (Years)	10.4	8.97	3.55	424	27
Gov spend per child (USD)	190.66	186.37	195.65	324	27
Growth mindset (1-6)	3.89	.	1.64	464	.
LM Returns for Boys	89.82	56.18	74.71	203	19
LM Returns for Girls	110.93	71.94	90.97	101	20
Effect of Reading Program (0-4)	2.24	2.53	1	455	27

Notes: Data on reading comes from the World Bank reading poverty indicator, and for schooling and spending from the World Bank Development Indicators. Data for labour market returns are drawn from [Montenegro and Patrinos \(2014\)](#). The effects of three reading programs described to respondents come from [Cilliers et al. \(2016\)](#), [Jackson and Makarin \(2018\)](#), and [Piper et al. \(2018\)](#). Further detail about the estimates of labour market returns is contained in Annex C and Table D1.

Table C2: Conjoint Experiment Results: Aid Project Preferences

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
Budget (USD million)	0.119*** (0.00422)	0.123*** (0.00713)	0.0595*** (0.0203)	0.129*** (0.00716)
Technical Advisors	0.0379*** (0.00790)	0.0421*** (0.00807)	0.0710** (0.0316)	0.0380*** (0.00834)
TVET	0.0998*** (0.0204)	0.0970*** (0.0209)	0.255*** (0.0664)	0.0864*** (0.0218)
Assessment	0.00878 (0.0210)	0.0106 (0.0213)	0.166** (0.0782)	-0.00168 (0.0223)
Foundational Literacy	-0.0187 (0.0216)	-0.0198 (0.0222)	0.0370 (0.0819)	-0.0210 (0.0232)
School Construction	0.0107 (0.0207)	0.0109 (0.0211)	0.180** (0.0690)	-0.00324 (0.0223)
Controls		Yes	Yes	Yes
Obs. (Responses)	7,008	6,792	540	6,204
Obs. (Respondents)	584	566	45	517
R ²	0.480	0.497	0.517	0.497
P-value on tests of equality:				
Assessment = School Construction	0.4130	0.4749	0.4377	0.2665
Assessment = FLN	0.3137	0.3308	0.5170	0.3051
FLN = School Construction	0.3881	0.4058	0.3640	0.2514

Note: The unit of observation is a hypothetical aid project presented to an individual respondent, and the dependent variable is an indicator that the project was selected as preferable (from a set of two options). Estimates are based on a linear probability model. Results are similar using a logit model (Table B4 and Table B5). The omitted category for projects is an IT project. Results are similar when estimating marginal means rather than average marginal component effects (Leeper et al., 2020). Controls include years of experience, gender, job title, agency and country fixed effect. Standard errors, clustered at individual respondent level, are in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table C3: Conjoint Experiment Results: Education Outcomes Preferences

	Full Sample	Full Sample	TVET Ministry/ Agency	Other Ministries & agencies
% with Foundational Literacy	0.618*** (0.0467)	0.616*** (0.0481)	0.330* (0.177)	0.648*** (0.0498)
% Completing Secondary School	0.773*** (0.0483)	0.791*** (0.0497)	0.991*** (0.181)	0.771*** (0.0521)
% Dutiful Citizens	0.907*** (0.0682)	0.921*** (0.0701)	0.905*** (0.233)	0.917*** (0.0742)
Controls		Yes	Yes	Yes
Obs. (Responses)	4,878	4,728	440	4,256
Obs. (Respondents)	617	598	55	539
R ²	0.144	0.147	0.155	0.148
P-value on tests of equality:				
Literacy = Secondary School	0.1148	0.0890	0.3275	0.1341
Citizen = Secondary School	0.0114	0.0256	0.4436	0.0122
Citizen = Literacy	0.0001	0.002	0.9727	0.0001

Note: The unit of observation is a hypothetical state of the world, presented to an individual respondent. The dependent variable is an indicator that this state of the world was preferred (from a set of two options). Estimates are based on a linear probability model. Results are similar using a logit model (Table B6 and Table B7). Controls include years of experience, gender, job title, agency and country fixed effect. At the foot of each column we report p-values on the null that one attribute is as equally valued as another. Standard errors, clustered at individual respondent level, are in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table C4: Explaining Spending Preferences

	FLN		TVET	
	(1)	(2)	(3)	(4)
<i>Beliefs about reality:</i>				
Foundational Learning	-0.0928 (0.0549)	-0.0584 (0.0533)	0.138* (0.0674)	0.172** (0.0703)
Average schooling (years)	-0.00681 (0.0183)	0.00133 (0.0200)	-0.00685 (0.0217)	-0.0228 (0.0222)
LM Returns (z-score)	0.0136 (0.0387)	0.0151 (0.0451)	0.0221 (0.0587)	0.0357 (0.0589)
Growth Mindset (1-6 score)	0.00400 (0.0362)	0.00913 (0.0340)	0.0364 (0.0595)	0.0446 (0.0512)
<i>Beliefs about interventions:</i>				
Scripted lessons (0-4 scale)	0.104 (0.0668)	0.0621 (0.0790)	-0.0862 (0.0756)	-0.0660 (0.0528)
<i>Respondent Characteristics:</i>				
Male		-0.107 (0.0713)		0.0265 (0.0942)
TVET Agency		-0.130 (0.230)		0.811*** (0.216)
<i>Country Characteristics:</i>				
Share of aid on TVET		2.070* (1.155)		2.566 (1.987)
Grad unemployment		-0.0395** (0.0185)		-0.0439* (0.0236)
Region FE	Yes	Yes	Yes	Yes
Obs.	594	498	594	498
R ²	0.03	0.08	0.04	0.14

Note: The outcome variable is an index summarising the strength of individual preference for foundational learning or for TVET. We show results for the individual components of this index in Table B2 and Table B3. Standard errors are clustered at the country level.

* p<0.1, ** p<0.05, *** p<0.01

D Appendix: Understanding Policymaker beliefs about the returns to school

What explains variation in policymaker beliefs about the returns to school? We first calculate the expected returns ($Returns_k$) for each hypothetical child, as the percentage growth in earnings from completing secondary school. This is the difference between expected earnings with secondary and expected earnings with primary, as a percentage of expected earnings with primary. The average estimated return to secondary school is 98 percent.

We then regress this measure of expected returns on the characteristics of the hypothetical child, and characteristics of the official responding. As there are four observations per respondent, we cluster standard errors by individual respondent.

$$Returns_k = \sum_{k=1}^3 \beta_k X_k + \sum_{j=1}^3 \delta_j Z_j + \epsilon \quad (4)$$

Where X_k are characteristics of the hypothetical child, such as being a girl or a boy, poor or rich and have a high or low IQ. We also include respondent characteristics as controls, represented by Z_j which includes gender, years of experience and their office role.

Contrary to our hypothesis, there is no statistically significant difference in perceived returns to education for girls and boys, or for low or high intelligence children. Officials expect returns to be 15 percentage points higher for children from poor families than from rich families. Female officials have higher expectations than male officials, particularly for girls (Table D1). We also see no correlation between the growth mindset of the respondent and the degree to which they think that initial intelligence matters for the labour market returns to education.

Table D1: Correlates of beliefs about returns to education

	(1)	(2)	(3)	(4)
Child: Girl (vs Boy)	6.772 (8.135)	8.570 (7.758)	-2.396 (7.910)	4.912 (7.297)
Child: Poor Family (vs Rich Family)	15.450*** (3.604)	15.487*** (3.583)	15.416*** (3.590)	15.881*** (3.609)
Child: High IQ (vs Low IQ)	3.077 (3.101)	3.200 (3.117)	3.240 (3.117)	7.367 (8.150)
Official: Female		20.431*** (7.794)	9.784 (7.859)	16.445** (7.255)
Official: Female X Child: Girl			33.925* (20.014)	
Official: Growth Mindset				-2.066 (2.469)
Official: Growth Mindset X Child: High IQ				-1.250 (2.070)
Controls	No	Yes	Yes	Yes
Outcome Mean	92.660	92.660	92.660	92.049
N (Responses)	2,005	2,005	2,005	1,984
N (Respondents)	527	527	527	521
R ²	0.007	0.052	0.058	0.056

Note: The outcome is the official's belief about the labour market return to secondary school over primary school. Controls include official's experience, job category, agency, government level (national or sub-national), and world region.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.