State of the Evidence

Description of the Evidence

Research from the US showed that the difference between a weak teacher and a great teacher led to a full year of learning for students (Hanushek and Rivkin 2010). Suggestive evidence from randomized evaluations also show that teacher quality is important for student learning (see “Teacher Accountability and Incentives” section). Together, this data and evidence demonstrates that when teachers are attending school and motivated or incentivized to exert more effort, that students learn more. To prepare teachers, education systems provide various kinds of training from pre-service training (qualifications/certificates) to in-service training once they become a teacher.

However, existing evidence on the efficacy of general in-service (or professional development) training shows limited effects. More research is needed to better understand how teacher training can be incorporated into other types of initiatives, how trainings should be structured, and what they should include to best prepare teachers for their jobs.

Examples of general in-service teacher training programs that did not improve learning outcomes come from the United States (Randel et al. 2016), Chile (Yoshikawa et al. 2015) where teacher professional development improved classroom practices but not learning outcomes, and China (Loyalka et al. 2019), where teachers found the training too theoretical to be applicable. In contrast, one example in Uganda trained teachers in a “learning how to learn” approach which increased student pass rates on a national exam by 24 percentage points (Ashraf et al. 2020).

Other research suggests that when education inputs such as student and teaching materials are combined with targeted teacher training, changes in pedagogy, and ongoing support or coaching to teachers, there can be a positive impact on learning outcomes. Researchers evaluated a month-long Read-a-Thon in the Philippines where students were encouraged to read as many books as possible through daily reading activities in school. Teachers were trained on incorporating reading into the curriculum through storytelling activities, literacy games, and silent reading. The implementing NGO also monitored program fidelity and supported teachers in using the new books for the duration of the read-a-thon. Overall, the results showed that encouraging an increased use of age appropriate reading materials by students and providing teachers with targeted training and coaching was a viable strategy for improving student’s reading skills (Abeberese et al. 2013). Targeted instruction and structured pedagogy programs (see related sections), also include effective examples of combining teacher training and coaching with other educational inputs to improve student learning. However, when pedagogies or new classroom materials are added without effective teacher training to accompany them, teachers may lose control of classrooms or be unable to satisfactorily provide instructions or answer questions, thereby actually lowering student learning, as in this example in Costa Rica (Berlinski and Busso 2017).
Additional research on the most effective ways to provide general in-service training for teachers—a central activity of every education system—is an important area for future inquiry. In the absence of clear lessons from rigorous research, policymakers can learn from descriptive data, existing research, and implementers for guidance on how to approach teacher training programs. For instance, the World Development Report 2018 includes a section on teacher training. A background paper by Popova, Evans, and Arancibia (2016) reviewed the body of evidence from quantitative and qualitative studies. Taking this body of evidence together, they found a few key factors for effective teacher training from high-income countries. In particular, evidence suggests that teacher training can improve student learning when the training:

- Is embedded in the curriculum;
- Prescribes a specific pedagogical method for teachers to use including detailed instructions on implementation;
- Includes follow-up support and coaching for teachers; and
- Involves teachers in a co-learning model.

Notes on Context
Teacher training and professional development courses require the infrastructure to gather and teach teachers. This likely requires compensating them for their time over and above their teaching time. Evidence suggests that it can be a highly effective component of an evidence-based program that includes other components as well. However, less evidence exists on the efficacy of stand-alone teacher training programs. Teacher training may be both more needed or less effective in contexts where current teaching methods favor rote memorization of students.

Equity Considerations
It may be possible to incorporate equity into teacher training programs by training teachers to keep equity in mind in the classroom or reduce their biases when teaching. However, there is not rigorous RCT evidence to inform the design of such programs at this time. In terms of equity among teachers, if a general teacher training program is implemented, it would be important to ensure equal opportunities for all teachers to participate.

Operationalization

Research Questions
Below are open research questions on this topic. This list is not exhaustive but rather is illustrative of the types of questions that will help education actors make more evidence-based decisions to improve learning. Education actors interested in implementing programs in this category may want to consider including a randomized evaluation alongside implementation to (1) understand the impacts of the program, and (2) add to the global knowledge base.

- What types of pedagogy can be employed during teacher trainings to improve teacher skills and therefore increase student learning?
- Can standalone teacher trainings be effective at increasing teaching skills and student learning, or are teacher trainings only effective when combined with another educational program?
- What is the role of ongoing teacher coaching or teacher professional development on teachers’ skills and outputs?

Successful Examples
Teacher training program in Uganda (Ashraf et al. 2020)

Further Action Options
For approaches with limited evidence of effectiveness in the literature, more evidence generation is recommended to close evidence gaps. Based on the evidence for this category, potential next steps might include:

- Connecting with researchers to identify relevant open questions that would benefit from further research;
- Other activities to think through the research needs of this evidence in your context.

If you are interested in exploring these or other options, please contact the J-PAL Education team at JPAL_Education@povertyactionlab.org, to set up an initial exploratory meeting. The team will be happy to brainstorm potential next steps.