

Learning, Marginalization, and Improving the Quality of Education in Low-income Countries

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Second volume in the series
Learning at the Bottom of the Pyramid



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Afterword

The Challenge Ahead for Learning at the Bottom of the Pyramid

Rachel Hinton and Asyia Kazmi

The chapters within this book present a stark reality. Among other sobering statistics, in a high-income country, 9 out of 10 children will be able to read by age 10; in a low-income country, 9 out of 10 will not (UIS, 2019). And, in an indictment of the effectiveness of school systems, it is not just out-of-school children who are disadvantaged. The majority of those who aren't learning sufficiently are actually in school.

It's clearer now than ever before: In the push to achieve the United Nations SDG4—quality education for all—we must shift our focus from *access* to schools to the *quality* of learning therein, while paying particular attention to those who are typically under-served or left behind. This includes those who may be deprioritized due to income, locality, gender, disability, refugee status, or those not in school due to early marriage, homelessness, or other challenges. Those, in other words, at the “bottom of the pyramid”.

The term “bottom of the pyramid” (BOP) acknowledges that there is a significant population of children with the least amount of power and resources. Naming this reality and making the scale of the challenge salient can play, as this book points out, a key part in catalyzing change. In every region, country, district, school, and class, there are those who fall behind or who are at risk of falling behind. It is how we identify, target, and support these children that marks a true commitment to equity, and a willingness to be held accountable.

As we examine how to reach children at the BOP, a critical issue to keep in mind is one raised by Beeharry (2021): namely, how can domestic spending of governments be most effectively deployed to address this worsening learning crisis? It is by supporting governments to implement policies informed by the evidence presented in this volume and elsewhere that policymakers can help ensure education systems reach, and effectively teach, the most marginalized.

This volume, in our view, supports the emergence of five key issues that are important for all educational systems in order to reach those at the BOP in a meaningful way. These include:

1. **Face the reality of the learning crisis:** Policymakers and funders need to appreciate the detrimental impact of poor literacy and numeracy skills on all other education and training priorities of their country. The global goal on learning is seriously off-track; and it is off-track for the large majority of children in the poorest countries. Systems must pivot so that policies address the needs of these children, and relentlessly and regularly ask, from the individual classroom to the national policy level, who is not learning and how to help them do so, aligning curriculum, assessment, and instruction in order to achieve this learning goal.
2. **Collect data to understand the problem:** These efforts require better quality and disaggregated data in order to see what is currently going wrong, where, and for whom. This needs to be accompanied by evidence that is produced locally by national researchers who understand the nuance of local issues, and are best placed to support uptake of findings. The gaps in funding and bias in the commissioning of research is a challenge that can and should be addressed.
3. **Act based on evidence of what is most likely to work:** We need to better incentivize the adoption of interventions that promote instructional coherence, namely, those that align curriculum, assessment, and teaching in order to rapidly improve learning outcomes. In this book there are many examples, such as utilizing assessment tools to continuously track students' learning and adapt instruction accordingly.

This should involve, for example, systemizing assessment-informed-instruction; providing ongoing support to teachers through coaching and ensuring that training provides teachers with practical experiences applicable in the classroom; supporting students with learning difficulties; providing mother-tongue instruction; and supplying trained teachers to rural areas.

4. **Support governments to implement effectively at scale:** Given the many urgent, competing priorities in the government's inbox, we need to be more effective and coordinated in communications to accelerate adoption of cost-effective policies and practices. There is increasing demand from policymakers (e.g., Building Evidence in Education group) for succinct and focused evidence synthesis, making better use of compelling data visualizations and smart technology to inform decision-making.
5. **Research the drivers of scale:** Finally, there is a need to understand how to scale up the many promising emerging innovations from civil society, the private sector, and government programs. We know a great deal about what works, but we need to learn from each other and advance the body of knowledge on how to improve learning outcomes at scale, for the most underserved. This will require support to implement science and replication studies in education, as is typically done in the health sector. We need to better understand not only which interventions work, but also the factors that create an enabling environment for successful scale-up and national adoption.

In sum, this volume is an important contribution to the global need for improved and time-sensitive information on key pedagogical issues, and better ways to understand how to improve outcomes for the underserved and the most marginalized in today's world. This process is complex, and involves many factors related to local historical, political, and economic contexts. As we move forward, collective efforts should focus on equipping all children with the learning of basic skills that are

a gateway to much wider opportunities. This should be seen as a moral imperative for us all.

References

- Beeharry, G. (2021). 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*, 82. <https://www.sciencedirect.com/science/article/pii/S0738059321000286>
- Building Evidence Funding Group. (n.d.). <https://www.worldbank.org/en/topic/education/brief/building-evidence-in-education>
- UNESCO Institute for Statistics (UIS). (2019). *More than one-half of children and adolescents are not learning worldwide*. <http://uis.unesco.org/sites/default/files/documents/fs46-more-than-half-children-not-learning-en-2017.pdf>

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