



What Works Hub
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Pre-service teacher education – The linchpin for embedding sustainable, scalable change in education systems

Insight Note

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Contents

- 1** | Sustainable, scalable change in education systems 04
- 2** | Cases: Pre-service Teacher Education reform in Zambia and Malawi 06
 - Transforming Teacher Education Activity in Zambia 07
 - Strengthening Teacher Education and Practice Activity in Malawi 10
- 3** | Recommendations and conclusions 13

1 | Sustainable, scalable change in education systems

Sustainability and scalability are essential to long-term change in education systems. The need for a sharper focus on these issues has become clear over the course of 2025, with the United States' more than 90% cut in international development aid and substantial reductions by the United Kingdom and other major donor countries. The dramatic recent reductions in international development aid for education, as well as for health and other sectors, only further enhance the importance of identifying and developing solutions that can be embedded in national education systems and, critically, are affordable within existing government budgets.

Many past international education aid projects funded by bilateral or multilateral donors have not taken this approach. National scale programmes have brought in 50 million, 80 million, or 100 million US dollars, set up parallel structures to support the spending of that money in ways that bypass recipient government systems – often in the name of transparency or avoiding corruption – and sometimes incentivised behaviours by education stakeholders that are not in the best long-run interests of the country. For example, projects have often introduced financial stipends for government employees to perform their existing job duties. In the current era, where funding has been so drastically reduced, such approaches can no longer be tolerated. International aid projects must be designed to support reforms that are affordable within national funding mechanisms.

Our argument that financial sustainability must be a foremost concern does not mean abandoning efforts to improve education for every child within an education system. On the contrary, we believe that this is the moral responsibility of all who engage in work in this sector. But it is no longer possible to do this by setting up freestanding national projects with that scope – there is just not enough international development aid funding available. We contend that the single most promising intervention point in an education system, from a sustainability and scalability perspective, is the formal pre-service teacher education (PSTE) system. Through PSTE, over time, an intervention reaches nearly *every teacher*, who in turn reaches nearly *every public-school student* in a country – and many private school students as well¹. It does not get more scalable than that.

One advantage of this approach is that PSTE systems already exist in nearly every country across the world, with just a handful of exceptions. There is no need to *recreate* the wheel – only to *strengthen and update* it. These existing systems must be better supported and leveraged for maximum efficiency, however. Too often, PSTE is siloed rather than well-integrated into national education systems, both financially and organisationally. But when connections are developed to strengthen the existing PSTE system and bring it into close alignment with both higher education and the primary/secondary school system, significant savings

¹ We acknowledge that in some contexts, particularly where there are teacher shortages and in conflict settings, there may be alternative routes to teaching that do not involve traditional PSTE institutions. However, the numbers of such teachers in most countries are generally small compared with those who have some type of formal PSTE.

can be achieved. International aid can then be aimed at technical assistance rather than on direct provision of training to in-service classroom teachers. This approach will be significantly less expensive.

Another factor that makes PSTE an ideal target for intervention within an education system is its reasonable scale. Compared with the number of in-service teachers, the number of teacher educators is quite small. This makes capacity development – even ongoing and intensive training – reasonable in cost. For example, in Zambia there are approximately 80 teacher educators who teach the instruction of foundational literacy in the 12 government colleges of education and universities offering primary level PSTE. Compare that figure with the more than 80,000 primary grade teachers in over 9,000 primary schools. The logistics of reaching every in-service teacher in a country are daunting. This difference in numbers means that training for teacher educators can be done directly rather than using cascade models, which have substantial weaknesses and poor long-term outcomes at scale.

Beyond cost and the size of the target group, a broader argument supports intervention in PSTE. Overall, it is more cost-efficient to *get teacher training right the first time* through a solid, evidence-based, and contextually relevant PSTE programme. If countries choose to neglect PSTE, they will remain caught in an endless cycle of needing to retrain all teachers through in-service trainings, attempting to compensate for poor initial teacher education. Are PSTE systems complex and sometimes resistant to change? Absolutely. But it is more feasible and affordable to invest in the improvement of a few dozen institutions and their teacher educators than to meaningfully reach every deployed teacher nationwide. Achieving the latter – beyond a thin cascade approach – is nearly impossible and incredibly expensive. That model will no longer work in the absence of infusions of substantial international education aid.

In the following section, we further discuss this approach in the context of two national-scale pre-service teacher education activities funded by USAID: the Transforming Teacher Education Activity in Zambia (2020–2025) and the Strengthening Teacher Education and Practice Activity in Malawi (2022–2025). The authors served as Project Directors for these two activities, leading design, implementation, research and evaluation. These cases demonstrate how PSTE institutions can be effective intervention points for sustainable and scalable education system improvement.

2 | **Cases: Pre-service Teacher Education reform in Zambia and Malawi**

In this essay, we offer two cases to support the argument developed above: that significant reform of national pre-service teacher education (PSTE) systems is not only attainable, but also one of the most scalable and cost-effective approaches to improving the quality of teaching and education more broadly. With this approach, the activities reached *all* teacher educators teaching in the relevant topic areas, while concurrently developing advanced technical skills in promising future leaders. Ministry of Education officials at various levels were also engaged, ensuring sustainability. All reforms enacted through these activities were designed with financial sustainability in mind; no changes were made that required non-governmental funding in the medium to long run. This approach built sustainability in capacity – which was embedded in multiple levels at the countries' Ministries of Education and teacher training institutions.

Transforming Teacher Education Activity in Zambia

Strengthening Teacher Education and Practice Activity in Malawi

Transforming Teacher Education Activity in Zambia

Transforming Teacher Education (TTE) began implementation in 2020. Florida State University's Learning Systems Institute was the lead implementer, with partners School-to-School International and the University of Zambia. The implementation team worked closely with the target institutions: all ten Zambian colleges of education and two universities that offered the primary teacher's diploma and bachelor's degrees in primary education. TTE's objectives were to:

- 1 Equip targeted colleges of education (COEs) and university faculty and lecturers with the skills and experience necessary to deliver effective instruction to teachers in training.
- 2 Standardise, align, and link practical, evidence-based pre-service teacher training and content with the primary school literacy curriculum.
- 3 Equip pre-service teachers in COEs and universities with the professional skills necessary to deliver quality literacy instruction in primary schools.

The 11 million US dollar² budget for TTE was modest in comparison with those of in-service projects funded by USAID in Zambia. For example, the USAID Let's Read Activity (2019–2025) was funded at 49 million US dollars.

TTE focused its work in three areas to achieve its objectives. First, capacity development for teacher educators was the core of the activity, as it enabled all other aspects to be successful and sustainable. TTE invested in capacity development in multiple ways. The team believed that it was important to reach *all* teacher educators teaching in primary teacher preparation programmes, not just a selected few. In our experience, we have not seen deep knowledge and behaviour change among teachers or teacher educators from cascade models where one or two representatives are trained and then return to their institutions to share knowledge. Therefore, TTE directly involved all teacher educators in a series of trainings over the course of three years, starting with a foundational literacy course to ensure all teacher educators had current and evidence-based knowledge on literacy, and then continuing to training on new curriculum content and pedagogical approaches. All teacher educators received multiple sessions of one-on-one coaching in their classrooms, in addition to group trainings. Through TTE's partnership with the University of Zambia (UNZA), 22 of the teacher educators earned master's of education degrees in Literacy, Language and Applied Linguistics through an abbreviated programme, which recognised the TTE trainings as equivalent to the coursework of an UNZA master's programme.

True sustainability can only be achieved when there is deep local expertise and leadership. Therefore, TTE offered a range of additional capacity development opportunities to teacher educators who were potential future leaders – either self-identified or nominated by their college administrators or the Ministry of Education. These opportunities included semester-long fellowships at Florida State

² TTE was initially awarded at a total cost of \$15 million US dollars. Budget constraints in the wake of the COVID-19 pandemic led to a reduction in total project size to \$11 million in 2023.

University, scholarships for online master's degrees at Florida State University, and participatory action research partnerships that led to international journal publications. These investments in future leaders aimed at giving these individuals the knowledge and skills needed to advance within the teacher training institutions and the Ministry of Education, building a network of PSTE supporters for the next generation.

Second, TTE led a PSTE curriculum development process to improve the quality of the foundational literacy content presented to student teachers. Working in alignment with the national literacy framework, TTE staff worked with teams of teacher educators from the colleges and universities to develop new modules that were high quality and freely available. The modules provided support for teacher educators attempting to move away from lecture-based teaching to more student-centred instruction. For example, there were a variety of activities in each of the six modules created, each with detailed instructions and learning objectives.

Third, TTE worked to encourage the reform of the practicum – called the school experience in Zambia. Research on PSTE identifies a high-quality practicum as a critical element of a successful PSTE system. The approach that existed in 2020 at TTE's start was inefficient and costly, however. Student teachers could select their own placements, anywhere in the country. To reduce their own costs, they would often travel home or to another location where they had family to stay with during the school experience term. But this meant that teacher educators needed to spend days crisscrossing the country on public transport to conduct often quick and minimal reviews. The PSTE institutions had no relationships with the schools where their students had placements, and no information on the quality of that experience. Some student teachers were left entirely alone to teach during their school experience, for example, without any support from a mentor teacher.

To address these issues, TTE convened a Practicum Working Group composed of key stakeholders from the colleges, schools, and the Ministry of Education. Through a series of consultations, situation analyses, and piloting, the following approach was developed:

- 1 Student teachers spend one SE term placed in a lower primary classroom (grades 1–4) at a school in the same district as the college, teaching all subjects but with a specific focus on literacy instruction;
- 2 Student teachers are placed in cohorts of four to five at each primary school and one supervising lecturer is assigned to work with that cohort throughout the term;
- 3 The supervising lecturer contacts their cohort weekly through text messages and phone calls to check on their progress, providing lesson planning tips and other support as needed;
- 4 Student teachers are observed twice, in-person, during the term with both visits specifically targeted at coaching the student teachers on practical ways they can improve their pedagogical and content area skills;
- 5 Class and mentor teachers are trained to observe and coach their assigned student teachers throughout the terms.

This approach was deemed successful by stakeholders and was institutionalised by the Zambian Ministry of Education in a circular to all PSTE institutions in January 2024. This experience demonstrates that even when there are embedded incentives for inefficient behaviour – in this example, travel per-diem paid to teacher educators for their observation travel – change is possible. With these changes, Zambian student teachers now get a better quality, more supported practicum experience, within the same budget footprint as the previous system. TTE did not provide any operational funding for these changes, just capacity development support on school experience planning and coaching of mentor teachers and teacher educators.

Working in the PSTE system is not the fastest way to reach learners in primary and secondary schools. But in the long run, PSTE systems touch nearly every learner in a country. In Zambia, this translates into nearly six million children and youth. At a cost of \$11 million US dollars, TTE will eventually reach most of them through their classroom teachers, as teachers trained with the new curriculum, pedagogy, and school experience approach reach classrooms. While the abrupt end of USAID funding prevented final monitoring and evaluation data collection for TTE, a Gates Foundation-funded research project is underway in Zambia that compares the classroom performance of student teachers from TTE colleges to those attending private colleges, which were not directly involved in TTE. Results from this study, expected in late 2025, will provide further evidence on the potential impact of reforms to national PSTE systems.

Strengthening Teacher Education and Practice Activity in Malawi

Strengthening Teacher Education and Practice (STEP) began implementation in January 2022 and was terminated by the US government in 2025. Florida State University's Learning Systems Institute was the lead implementer, with partners School-to-School International, Development Aid People-to-People, CharChar Literacy, and the University of Malawi. The implementation team worked closely with all public and private teacher training colleges and one university that offered a certificate in primary education. STEP's objectives were to:

- 1 Strengthen primary teacher education preparation programmes (pre-service).
- 2 Operationalise a national continuing professional development (CPD) framework, including an established system for new teacher induction.

The 15 million US dollar budget allocated to STEP to conduct this intervention was a much smaller investment than recent in-service projects funded by USAID in Malawi that focused solely on improving instruction in lower primary schools. For example, the 74 million US dollar USAID Next Generation Early Grade Reading Activity (NextGen) (2022–2025) focused on in-service early primary teachers and included intensive training for teachers in grades 1 and 2. The Malawi Early Grade Reading Improvement Activity (2015–2020) focused on grades 1–4 only and was funded at 65 million US dollars. With STEP, approximately two-thirds of field expenses were allocated to the objective of improving PSTE; therefore, the necessary budget for PSTE reform was less than the full amount allocated for the project, and only 9 million US dollars had been spent at project closure.

The STEP team began by addressing the capacity of teacher educators at the teacher training colleges (TTCs), since they are critical stakeholders within the system and their expertise is necessary for improving curricula, instruction and student teachers' experiences. Findings from the baseline situation analysis indicated that teacher educators lacked critical knowledge and skills for providing instruction in literacy pedagogy. Utilising a course outline for foundational literacy implemented in several other contexts (including Nigeria, the Philippines, Zambia and Rwanda), the Senior Literacy Specialist focused on contextualising the course for Malawi. The STEP team provided one-on-one support to every teacher educator. The foundational literacy course was delivered by a team of four trainers to six cohorts of approximately 50 teacher educators each, ensuring a low trainer-to-participant ratio. Each cohort's training lasted just over six months to provide adequate time for teacher educators to learn the content, practice teaching lessons based on the content, and conduct participatory action research projects at their TTCs on a topic related to the course. All teacher educators across Malawi who taught in the Languages Department (where literacy-based courses were taught) were invited to participate in the course.

In addition to the week-long monthly course meetings, two months were allocated for research, during which every teacher educator contributed to a research team at their institution. Prior to the research period, the teams received intensive

support to develop a research question and hypothesis, conduct a brief literature review, design a research plan, develop data collection tools, and prepare for data analysis. The University of Malawi faculty spearheaded the research training and were supported by the Florida State University faculty and STEP staff to ensure methodological rigor. During the two-month research period, faculty from the University of Malawi and staff from STEP provided two research support visits to every research team, helping them review their processes and analyse their data. Upon returning for the final session of the foundational literacy course, the teacher educators worked to summarise and share their findings with colleagues. In preparation for the National Literacy Symposium, each team developed a poster of their findings for presentation to peers and national stakeholders from across Malawi.

The STEP team deployed four Teacher Educator Trainers into the field. Each of the four trainers was allocated four to six teacher training colleges (TTCs), where they continued assisting teacher educators to improve their knowledge, skills and pedagogies related to the teaching of literacy. Every month, the trainers would conduct classroom observations at the TTC, engage teacher educators in a feedback session about what had been observed, deliver a short training session, and provide time for the teacher educators to reflect on the practices they had been trying, what had been working, and what additional support they felt was needed. During these visits, teacher educators were engaged in additional training based on observed needs and a list of prioritised topics (such as Universal Design for Learning, engaging in professional learning communities, pedagogy, research methodology, etc) and individualised mentorship. The participatory action research support was highly successful. Every teacher educator was aware that the expectation was for all student teachers to be engaged in action research, but the teacher educators had not known the process for conducting research.

The STEP Activity received a Stop Work Order from USAID in January 2025 at the three-year point of the project, after only two full years of intervention. At that time, the STEP team had provided intensive, continuous support to 101 education administrators and Ministry officials and 336 teacher educators – and had reached a total of 3168 student teachers (approximately half of its target of 7494, the balance of which was scheduled to enrol in Spring 2025) at 22 teacher education institutions training primary school teachers. 89% of tutors had exhibited gains on assessments of their knowledge, skills, and attitudes related to the teaching of early grade literacy and had expressed confidence in their ability to impact education within their local community. At the time of project closure, 50 action research projects had been completed by all teacher educators in collaborative teams, 79 projects were underway through collaborations between teacher educators and student teachers (for the first time), and one TTC had launched a college-based reading programme for children who struggled to read – with student teachers providing tutoring to the local primary school children three days per week.

In year four, the project was on target to restructure the teaching practice and provide training to TTC supervisors (teacher educators who provide oversight) on how to supervise the 6724 student teachers who would be completing their

practicum experience during 2025. The intensive support that STEP provided directly to teacher educators across Malawi translated to higher quality experiences for student teachers – for the current cohort and for all of those that follow. Nine million dollars sounds like a large amount of money – but is it? Consider that the teacher educators in Malawi who experienced our intervention will train approximately 70,000 new primary school teachers over the next ten years using the evidence-based pedagogies developed, promoted, and supported by STEP. That is an investment of less than 130 US dollars per teacher.

3 | Recommendations and conclusions

Ignoring pre-service teacher education (PSTE) traps countries in endless cycles of trying to fill gaps in teachers' knowledge and skills through large-scale in-service interventions. This is not sustainable for low- and middle-income countries and is a poor use of resources for any country. The two PSTE activities discussed above demonstrate that education system change can be achieved with affordable, sustainable approaches.

We argue that targeted investments in PSTE must include three components: 1) high-quality capacity development for teacher educators, 2) improved curriculum, and 3) strengthened systems that support PSTE. A detailed discussion of how to engage in these three areas is beyond the scope of this short piece. We are completing a book on this topic which will be published in 2026, detailing the three pillars of a quality PSTE system and the steps governments should take to ensure their PSTE systems have strong foundations. In the short run, however, a sensible place to start is by breaking down the silo of PSTE. PSTE can only be an effective lever for change in education systems if connections to other components of the education system are strong and lasting. This should include the development of connections between PSTE institutions and other higher education institutions, government and quasi-government agencies that have oversight over teachers and education broadly, primary and secondary schools, and donor funded projects. With these relationships in place, PSTE can serve its role as the key to sustainable educational change at scale.

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