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FIRST PRINCIPLES:

DESIGNING EFFECTIVE PRE-SERVICE TEACHER EDUCATION PROGRAMS

COMPENDIUM



Credit: American Institutes for Research

This *First Principles: Designing Effective Pre-Service Teacher Education Programs Compendium* provides an overview and guidance for designing and implementing pre-service education programs. The principles, steps, and indicators are primarily meant to guide program designs, including the development of requests for and subsequent review of proposals, the implementation of program activities, and the development of performance management plans, evaluations and research studies. The *First Principles* are intended to help USAID education officers specifically, as well as other stakeholders— including staff in donor agencies, government officials, and staff working for international and national non-governmental organizations— who endeavor to improve education through the pre-service education of future teachers. The guidance in this document is meant to be used and adapted for a variety of settings to help USAID officers, educators and implementers grapple with the multiple dimensions of teacher professional development and overcome the numerous challenges ensuring new teachers are equipped to meet the challenges in providing education. The last section provides references for those who would like to learn more about issues and methods in pre-service education programming.



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EQUIPI: Building Educational Quality through Classrooms, Schools, and Communities is a multi-faceted program designed to raise the quality of classroom teaching and the level of student learning by effecting school-level changes. EQUIPI serves all levels of education, from early childhood development for school readiness, to primary and secondary education, adult basic education, pre-vocational training, and the provision of life-skills. Activities range from teacher support in course content and instructional practices, to principal support for teacher performance, and community involvement for school management and infrastructure, including in crisis and post-crisis environments.

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ACRONYMS

CPD	continuing professional development
EFA	Education for All
GTZ	German Agency for Technical Cooperation
HEC	higher education commission
MIITEP	Malawi Integrated In-Service Teacher Education Program
MOE	ministry of education
NGO	non-governmental organizations
NTTC	National Teacher Training College
PLC	professional learning communities
Pre-STEP	Pre-service Teacher Education Project
PSTE	Pre-service teacher education
TQI	Teacher Quality Index
TRC	teacher resource centers
UPE	universal primary education
USAID	US Agency for International Development

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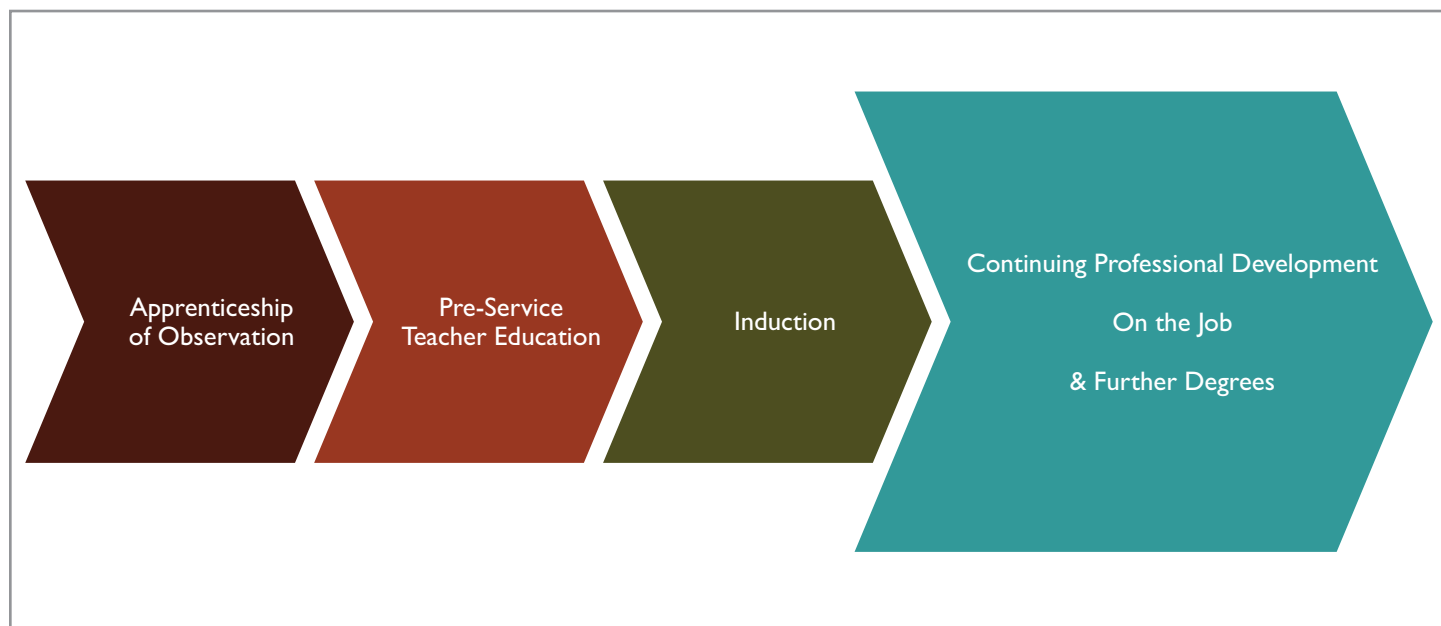
INTRODUCTION: PRE-SERVICE TEACHER EDUCATION AND ITS IMPORTANCE IN EDUCATIONAL DEVELOPMENT

Pre-service teacher education (PSTE)¹ programs are the first form of professional study that individuals complete to enter the teaching profession. These programs typically consist of a blend of theoretical knowledge about teaching and a field-based practice experience (called a *practicum*). The quality of training provided through PSTE programs affects teachers' practice, effectiveness, and career commitment (Eren & Tezel, 2010; Liang, Ebenezer, & Yost, 2010; Roness, 2010). The quality of teaching and learning taking place in the classroom therefore depends on and reflects the quality of PSTE programs. Because student achievement depends significantly on the quality of teachers, which in turn depends on the quality of PSTE programs, developing and preserving high-quality of PSTE programs can go a long way in the success of development activities that aim to improve the quality of teaching and learning for all children (Nye, Konstantopoulos, & Hedges, 2004; Rivkin, Hanushek, & Kain, 2005; Sanders & Rivers, 1996; Verspoor, 1989).

From a larger perspective, PSTE programs are part of what scholars of teaching call a *continuum of learning to teach*, as illustrated in Figure 1 (Schwille, Dembélé, Schubert, & Planning, 2007). As part of this continuum, the pre-service programs are also regarded as foundational building blocks for career-long professional development (Darling-Hammond, 1996). In most developing contexts, the PSTE programs are regulated by the governments and implemented by institutions accredited by the ministries of education for licensing and certification of teachers. The accreditation processes are typically designed to ensure that PSTE programs are aligned with the policies and standards governing teacher certification/licensing. Because teacher certification policies and standards vary from one country to the next, PSTE programs also vary in duration and content, as well as in the nature of practice teaching.

It is also noteworthy that although preservice teaching appears to most people as the first stage of a teaching career, the informal phase in learning to teach begins much earlier. The first stage in the continuum of learning to teach is known as the *apprenticeship of observation*, the period when one is a student observing his or her teachers. The formal PSTE is, then, the second stage describing the period when a prospective teacher participates in and completes a formal teacher preparation

Figure 1: Continuum of Learning to Teach



¹ Also known as *initial* teacher education (ITE).

program enabling him or her to acquire the knowledge (both content and pedagogy), skills, and attitudes to be an effective teacher. PSTE is followed by *induction*, which refers to the first year of a teacher's career. Finally, learning to teach is an unending process spread over one's entire teaching career through continuing professional development (CPD). CPD refers to teacher participation in in-service training or professional opportunities to update and upgrade knowledge, skills, and qualifications (du Plessis & Muzaffar, 2010). (CPD also serves to enhance teachers' professional identity.) In-service teacher training is another term widely used for the training provided to practicing teachers throughout their careers instead of CPD. This final stage is marked in Figure 1 by the largest arrow, for in an ideal situation teachers would periodically and regularly receive in-service training throughout their careers.²

PSTE programs are under immense pressure in developing countries due to a strengthened global commitment to extend the reach of quality education to all children. Introduction of free universal primary education (UPE) in many countries in the developing world, as set out in the first Education for All (EFA) framework in 1990, has increased the demand for trained teachers in proportion to huge and rapid increases in student enrollment. The gaps between teacher demand and supply have resulted in severe shortages of qualified teachers in developing countries. Teacher shortages plague many education systems in the developing world and often undermine the effectiveness of development interventions aiming to improve student access to quality education (Pandey, 2009). Developing nations are also faced with very high dropout rates, attributed largely to poor quality of education, most often in public schools. Thus, both the need to enroll as well as retain an increasing number of children is bringing PSTE under increasing pressure and scrutiny. PSTE programs are also expected to keep up with the educational reforms that advocate for a shift from teacher-centered teaching methods to learner-centered approaches. The conceptual shift away from the traditional conceptions of teaching together with the need to rapidly supply an increasing number of teachers is producing immense pressures on teacher education programs across the developing world.

Despite its importance, the state of PSTE in developing countries is widely noted for not effectively responding to the massive challenge of providing quality initial teacher preparation to pre-service teachers (Akyeampong, 2006; Kanu, 2005, 2007; Schwille, Dembélé, Schubert, & Planning, 2007).

The developing countries need support in their efforts to make PSTE institutions adequately responsive to the needs and new reforms of their respective education systems. Although PSTE is primarily the responsibility of host governments, various donors have also begun to respond to the need for supporting governments to improve their PSTE programs.

Based on an analysis of the lessons learned from the field experiences and from the research literature, this document offers a set of principles aimed at helping the design of development interventions in PSTE. A principles-based situation analysis will assist missions to formulate substrategies for PSTE that require donor support. Along with descriptions of principles, examples from previous and ongoing interventions will be used to illustrate the principles in action. This document provides a tentative list of generic steps that may be used and adapted to develop PSTE interventions. As with any intervention, it is of critical importance to understand the specific contexts in which the intervention is being implemented and design the intervention accordingly. For example, depending on the current



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² It is not uncommon for teachers in developing countries to have taught for many years with little or no in-service training.

PSTE program, enabling conditions may already exist, such as a well-developed infrastructure of training colleges with some experienced staff. In some contexts the ministry of education may need assistance in developing teacher education faculty; in others, the infrastructure; and in yet others, the structure and curriculum of particular PSTE programs.

Following the sections on principles and steps, some challenges and limitations are also discussed. Finally, the document provides a brief description of suggested indicators for success as examples of ways to measure PSTE programs.

The focus of this document is institution-based pre-service teacher education, and thorough discussion of distance, accelerated, local recruitment and training, and other alternative models of PSTE is beyond its scope.³

Two Illustrative PSTE Programs

In this section, two donor-supported PSTE interventions (one in Malawi and one in Pakistan) are briefly described. Because both interventions have been designed to improve the capacity and effectiveness of PSTE institutions, many of their features are relevant to the key principles discussed in this compendium and will be used throughout it to illustrate the principles.

Malawi Integrated In-Service Teacher Education Program (MIITEP)

MIITEP, established by Malawi's ministry of education with support from the World Bank and the German Agency for Technical Cooperation (GTZ), was implemented in 1994 after the introduction of free primary education caused a rapid and massive expansion of enrollment requiring an accelerated process for acquiring a large number of teachers. Through MIITEP, which was implemented from 1994 to 2006, 22,000 "unqualified" teachers were quickly recruited and posted in classrooms in response to an acute teacher shortage. Most of these untrained teachers were recruited in 1994–1996 (World Bank, 2010). Despite the use of the word *in-service* in the title, none of the MIITEP teachers received traditional formal, institution-based PSTE.

The purpose of the MIITEP was to train teachers through a mix of pre- and in-service teacher training. MIITEP teachers received 3 months of residential training in a teacher training

institution followed by 20 months of distance learning. The distance learning component was conducted by head teachers and local advisors and supervised by college tutors from the teacher training institution. The implementation of the program was a joint responsibility of the teacher education colleges and the schools where teachers were assigned to teach. Therefore, the planning for the MIITEP implementation assumed strong linkages between the schools and the teacher training institutions. The final phase of MIITEP required the teachers to return to the teacher training institution for a month's revision before they wrote their final exam (Kunje, 2002; Stuart & Tadoo, 2000; also see World Bank, 2010).

Pre-service Teacher Education Project (Pre-STEP) in Pakistan

Pre-STEP, which began in 2009, is a 5-year USAID-funded initiative to improve the quality of primary and secondary education through improved pre-service teacher preparation. Pre-STEP supports Pakistan's higher education commission (HEC) and ministry of education (MOE) to develop the capacity of 15 university-based faculties of education and 75 teachers' colleges in Pakistan. It has three main development objectives:

1. To improve systems and policies that support teachers, teacher educators, and educational managers
2. To develop and/or revise, evaluate, and finalize standards, curricula, and modules for PSTE degrees
3. To develop a plan for implementing new curricula for pre- and in-service teachers

To achieve these objectives, Pre-STEP engages with Pakistani PSTE programs and institutions at all levels of implementation.

Pre-STEP consists of multiple interventions, including the development of professional standards, enhancement of the infrastructure of the university and college-based faculties of education, establishment of professional linkages with U.S. institutions, and development of teacher educators in all the partnering Pakistani institutions. The institutional strengthening needs of Pakistani institutions were determined through baseline assessments. The project is simultaneously working on improving institutional capacity along multiple dimensions. This involves developing infrastructure, programs, and the role of the teacher educator in PSTE institutions.

³ See Lynd (2005) for a detailed analysis of alternative certification, recruitment of local teachers, distance education models, and structured materials models.

8 KEY PRINCIPLES IN DESIGNING PRE-SERVICE EDUCATION PROGRAMS

The key principles for the practice area of PSTE operate on three separate but interconnected levels: *policy*, *program*, and *institutional*. *Policy-level principles* refer to the macro-level goals of the entire PSTE system, within the framework of a given country. *Program-level principles* seek to answer how the PSTE program fits in with the larger policy goals while including research-based systematized standards and processes for PSTE to be most effective. *Institutional level principles* address the manner in which institutions themselves can improve on a micro level (i.e., the faculty, resources, and opportunities available to teachers and others in the PSTE system). The principles under each of these levels are given below.

Policy-Level Principles

Principle 1. A coherent pre-service system is predicated on a shared vision

A shared vision has the potential to promote purpose, ownership, and commitment of what a PSTE system should look like. A coherent PSTE system entails alignment of policies with the reality and needs of a given population. Many questions will be raised when designing a PSTE intervention, and it is critical that local context and culture be taken into account. They may include some of the following questions: What type of PSTE system is best suited for the context of the country? How should the new program be structured? How should the existing system be revised? How much time should be assigned to institution-based study? How much time should be assigned to the school-based practicum? How should the program be sequenced? What qualifications should teacher educators have? What prerequisites should pre-service trainees have? What will be the roles and responsibilities of different stakeholders?

Questions such as these will generate a variety of responses from different educational stakeholders. Answers to the questions will be affected by the current system and practices as well as historical, political, religious, and cultural factors. Some stakeholders' answers will be given more attention because of power relations. However, it is critical for educational stakeholders to develop a *shared vision* of the purpose, scope, and nature of an effective PSTE program as the answers to such questions will shape the form and content of PSTE programs.

Ideally, a shared vision would be responsive to both the local and national realities as well as to evidence from national and

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international research on effective teacher preparation. For example, although the research and international experience may favor longer PSTE programs, resource constraints and high post induction teacher attrition rates in a particular country may favor shorter PSTE programs followed by a staircase of professional development, as in MIITEP (see Lewin, 2005).

Envisioning interventions without adequate consensus can sometimes result in wastage of resources and failure of interventions.⁴ However, this principle as a whole should not be construed as implying that a shared vision is a necessary requirement before developing donor-supported PSTE interventions. Devoting too much to vision development as a planning process can be counterproductive (see Fullan, 2007). Sometimes interventions may begin before consensus is achieved. For example, the 4-year PSTE program currently being piloted in Pakistan under the Pre-STEP initiative can be used to generate consensus based on its results. The success of particular interventions can also contribute to the development of a shared vision.

⁴ Commenting on the National Teacher Training College (NTTC) in Lesotho, Ntoi and Lefoka (2002) attribute the absence of collegiality to the absence of a shared vision for the program to which the vast majority of stakeholders would subscribe and provide their full commitment. According to Ntoi and Lefoka, the NTTC lacked a shared philosophy on a range of issues.

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Principle 2. Eliminate fragmentation in the teacher education system

Pre-service teacher education programs need to be aligned with various elements within the education system. This includes alignment with policies as well as ensuring that the different actors throughout the education system work in a coordinated manner.

At the policy level, teacher certification and licensing policies⁵ provide the foundation for PSTE programs. As a result, effective interventions need to be aligned with these policies. (These policies should be based on a set of coherent and consensus-driven national professional standards.)

To ensure the effective implementation of a PSTE intervention, coordination must occur within the various institutions and at the pre-service, induction, and in-service stages of the teacher's career that design, implement, and support the pre-service teacher education program. The various institutions and organizations may include the curriculum unit of the ministry of education, universities and other secondary or postsecondary teacher education institutions, school districts, teacher resource centers (TRCs), schools, and NGOs and other private organizations.

⁵ Certification and licensing practices varies between countries. In the U.S. context, licensing is often said to be done by the government and certification by professional organizations.

The level and years of general education need to be balanced with the type and length of pre-service teacher education. (This concept is discussed later in the Challenges and Limitations section.) PSTE also needs to be aligned with the type and length of in-service professional development opportunities available, required, and recommended for teachers after the pre-service and induction phases to ensure lifelong learning. Fostering a culture and means of continuing professional development is crucial not only to refresh and expand teachers' content knowledge and effective teaching practices, but also as a way for teachers to learn about changes in curriculum, technology, and national priorities as well as new teaching and learning methods beyond the pre-service stage. CPD is also an important aspect of teachers' professional identity.

Reforming many different parts of the education system simultaneously may be challenging due to structural difficulties. In the case of Pre-STEP, separate administrative structures for pre- and in-service teacher education inhibit the integration of these programs. Similarly, the experience of MIITEP suggests that the extreme increase in student enrollment and the rapid recruitment of untrained or undertrained teachers left the teacher colleges and school communities unprepared to provide the appropriate training required to build teacher capacity and necessary classroom support.⁶ Lack of resources, difficulties in recruitment, and the existence of an unstructured career path, among other factors, may also perpetuate a fragmented teacher education system.

⁶ For a detailed analysis of this issue, see Kunje (2002).

Program-Level Principles

Principle 3. Effective pre-service teacher education should be aligned with professional standards for teachers

The curriculum, pedagogy, and assessment processes of pre-service programs need to be aligned with a set of professional standards, which are statements about what pre-service teachers should know and be able to do before they are certified. These professional standards should be based on

content knowledge aligned with the curriculum standards for students at different grade levels. These standards should also include the pedagogical skills, knowledge about child development and social-emotional learning, and child-centered learning environments that a teacher would need to be effective. Table 1 highlights some elements that a successful pre-service teacher education program may exhibit. However, it is critical that elements be decided locally, based on local requirements, and professional standards taking into consideration professional literature on effective PSTE programs.

TABLE 1. ELEMENTS OF A SUCCESSFUL PSTE PROGRAM

Element	Type of Skill /Understanding
Personal and professional growth as a teacher	<ul style="list-style-type: none"> • <i>Fosters a sense of identity as professional teachers</i> • <i>Facilitates inquiry, reflective practice, and awareness of potential biases based on prior experiences (including perceptions related to teaching and learning as well as to gender, race, ethnicity, socioeconomic status, cultural and linguistic differences, etc.)</i> • <i>Develops a desire for personal and professional growth</i> • <i>Fosters an understanding of the professional ethics of being a teacher</i>
Pedagogical content knowledge	<ul style="list-style-type: none"> • <i>Encourages a balance between child-centered and direct instruction approaches toward teaching and places less emphasis on rote learning and emphasizes higher order thinking skills such as application and problem solving.</i> • <i>Encourages prospective teachers to connect different school subjects and promote holistic learning, through project-based and experiential learning, and where applicable, multi- and interdisciplinary education</i> • <i>Develops prospective teachers' exposure to multiple methods of organizing classroom activities, including a mixture of group, pair, and individual work as well as how to teach learners with different learning styles</i> • <i>Knows how to effectively teach different subjects (this includes pre-service teachers acquiring sufficient content knowledge, especially for core subjects such as language, mathematics, and science).</i> • <i>Knows how to link school subjects with local social issues, such HIV/AIDS and other health issues, gender issues, peace education , in a contextually appropriate and relevant manner</i>
Content knowledge	<ul style="list-style-type: none"> • <i>Emphasizes content knowledge of core school subjects such as language, mathematics, science, and social studies.</i> • <i>Connects learning in school subjects with the social and civic life of the students in a contextually appropriate manner, such as addressing peace education, HIV/AIDS, and other health and hygiene issues</i>
Class room management	<ul style="list-style-type: none"> • <i>Provides experience using curricular objectives and teaching and learning resources to develop unit and lesson plans.</i> • <i>Knows how to ask questions and respond to learners appropriately</i> • <i>Knows how to use positive reinforcement and constructive criticism appropriately</i> • <i>Knows how to encourage learners to take ownership of their own learning</i> • <i>Knows how to have learners participate in some classroom management tasks as appropriate.</i> • <i>Knows how to manage time effectively</i> • <i>Knows how to create, use, and manage teaching and learning resources</i> • <i>Knows how to teach multigrade classes, when applicable</i> • <i>Knows how to teach classes with a large number of learners (typical in many developing countries)</i>

TABLE 1. ELEMENTS OF A SUCCESSFUL PSTE PROGRAM (CONT.)

Element	Type of Skill /Understanding
Assessment	<ul style="list-style-type: none"> • Knows how to assess learners' achievement and progress through formative (continuous) and summative (final) assessment • Knows how to manage student marks and performance records
Addressing special needs and challenges	<ul style="list-style-type: none"> • Sensitizes prospective teachers to the needs of and teaching methods for students with disabilities • Extends the repertoire of classroom management to include management of very large classrooms and multigrade classrooms (typical in most developing countries) • Knows how to teach in special circumstances, such as during conflict or when natural disasters such as when earthquakes or flooding occurs. • Knows how to recognize and address issues related to gender discrimination, children with and/or affected by HIV/AIDS, and orphaned and vulnerable children
Child development and emotional/psychological support	<ul style="list-style-type: none"> • Understands children's cognitive, physical, and emotional development and how to teach accordingly • Develops skills to identify and professionally address signs of learners' emotional and/or psychological distress and/or physical abuse
Professional collaboration	<ul style="list-style-type: none"> • Instills the value and importance of forming and participating in professional learning communities enabling teachers to work together to improve their teaching practices, discuss classroom related issues with other teachers, and form professional learning communities • Knows How to work with a mentor as well as become a good mentor themselves
Community engagement	<ul style="list-style-type: none"> • Fosters an awareness of the valuable and important potential role of parents and community members in children's learning • Knows how to work collaboratively with parents and community members to enhance and provide and get feedback from them pertaining to learners' achievement
Assessment	<ul style="list-style-type: none"> • Develops a working repertoire of techniques of assessing students' learning, including the formative (continuous) assessment and summative (final) assessment • Provides hands-on practice in keeping records of students' performance
Action research	<ul style="list-style-type: none"> • Helps prospective teachers reflect on and improve their professional practice • Develops ability to collect data about various aspects of his/her classroom practice, and use the data meaningfully to engage in reflection and make evidence-based changes in professional practice
Working within a system ⁷ of education	<ul style="list-style-type: none"> • Helps prospective teachers understand and manage expectations of immediate supervisors and other individuals within the system • Develops ability to receive and respond to feedback from the supervisors' and others' feedback about their performance • Knows how to self-identify areas of professional practice that need improvement • Knows how to access sources of assistance within the system for improvement

7 The term system here includes working within the classroom as well as with supervisors, school leaders, ministry of education officials, parents, and community members.

Principle 4. Inclusion of a strong practicum

It is important to ensure that the practicum is an effective learning experience. Effective teacher education programs need to ensure that pre-service teachers have sufficient time to apply what they have learned (Darling-Hammond, 2006c).

The practicum enables pre-service teachers to apply the concepts and strategies they are learning in their coursework alongside teachers who can show them how to teach in ways that are responsive to learners. Applying their knowledge and skills in a real life context enables pre-service teachers to have authentic experiences that facilitate deep learning (Kolb, 1994). Student teachers who participate in a practicum are better able to understand theory, apply concepts they are learning in their coursework, and support student learning (Koerner, Rust, & Baumgartner, 2002).

The form, content, and length of a practicum can vary from one context to another. Two common forms of practicum are microteaching and school-based teaching (Zeichner & Conklin, 2008). *Microteaching* is a term used to describe a form of practicum whereby a pre-service teacher teaches a lesson or part of a lesson to fellow pre-service teachers. This usually occurs at the pre-service institution rather than in a school classroom with children. In contrast, a *school-based teaching* practicum usually involves a pre-service teacher being assigned to a school for a period of time. The pre-service teacher works in collaboration with the regular classroom teacher, who acts a mentor. The pre-service teacher plans and delivers some lessons to the children.

Because supervision in a school-based practicum is usually a shared responsibility between PSTE faculty and the school teachers where the pre-service teachers are assigned, effective school-based practicum experiences require program faculty to work closely with pre-service teachers and the school administrators and pre-service teachers' supervisors (usually practicing teachers) at the school where the pre-service teacher is assigned. Working collaboratively, PSTE faculty and the pre-service teacher's supervisor set practice goals, observe the practice teaching session, coach and mentor the pre-service teacher, and provide both ongoing (formative) feedback and summative evaluation on the pre-service teacher's professional performance (Darling-Hammond, 2006b). An effective practicum experience also involves engaging pre-service teachers in collaborative and reflective self-assessment processes. These self-assessment processes may include reflective thinking, action research, or journal writing.

One specific example of a strategy can be seen in the concept of instructional rounds, which mirrors residency rounds in the medical profession. This calls for the prospective teacher to be immersed in walkthroughs, have a mentor, and become part of a network of education professionals, under a clearly articulated school or district improvement strategy.

To ensure that the practicum is effective, all those involved should have a good understanding of all issues pertaining to how the various aspects of the practicum are to be carried out, especially those concerning the supervisor. Clear policies, procedures, regulations, expectations, and guidelines regarding supervisory practice, including the evaluation process, need be communicated to all involved before the start of the practicum, preferably well in advance (Ralph, Walker, & Wimmer, 2008).

Organizing a practicum requires the placement of pre-service teachers in classrooms within a specific time period for successful completion of the PSTE program using this field based training. Colleges need to establish partnership schools to enable these hands-on experiences for pre-service teachers. Although schools located near the teacher training institution may be easiest to access and work with, the number of pre-service teachers who need to do their practicum will likely require pre-service teachers to be placed in schools located a farther distance away from the institution. Some pre-service teachers may be placed in remote schools. Where pre-service teachers are placed will depend on the capacity of the college and individual schools. Some special circumstances should be given particular attention (e.g., placing female pre-service teachers in remote locations can be a problem as it may be unsafe for them or culturally inappropriate).

Although participating in a practicum is a beneficial experience for pre-service teachers, planning and implementing a practicum for many pre-service teachers requires great attention to planning, organizing, and coordination. This can be challenging for PSTE program faculty in developing countries who are expected to train a particular number of teachers, often in a relatively short span of time. Issues such as transport and travel time for faculty supervision need to be thoroughly considered when planning a practicum. The trade-offs need to be carefully considered in the design of a practicum.

Given that the practicum is a stressful experience for pre-service teachers, faculty of PSTE programs must provide sufficient emotional and academic support to them during this time (Zeichner & Conklin, 2008). Sometimes pre-service teachers may be hesitant to seek support from supervisors

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or ask questions for fear of their need for support reflecting poorly on their performance assessment. It is important for pre-service teachers to build relationships with not only the people who will evaluate them but also with other teachers who can serve as mentors or counselors. Emotional support may include guidance on how to handle stressful situations, ensure personal and professional growth, understand identity as a teacher, and interact with different individuals within the education system, such as fellow teachers, parents, head teachers, and school management committee members. Academic support may include strategies on how to teach learners with differing needs, teach a very large class, teach a multigrade class, teach in special circumstances such as areas affected by crisis and conflict, and use child-centered teaching methods.

A school-based practicum typically requires pre-service teachers to interact with both their faculty supervisors and collaborating teachers in schools. Some programs, such as MIITEP, shifted the tutoring responsibilities to school-based mentoring teachers. Such mentoring can be very beneficial for the pre-service teachers (Bullough & Gitlin, 1994). Senior teachers in the school are not always ready for such roles and may not be motivated to accept additional responsibility without appropriate incentives and/or sufficient orientation. In the case of MIITEP, experienced teachers were expected to work as mentors for the pre-service teachers assigned to their schools. However, these teachers were either ill-prepared or too overworked to carry out mentoring responsibilities. This example from Malawi illustrates the importance of the aforementioned principle of needing to ensure harmony within the different elements within a teacher education system.

In some contexts, it may not be possible to implement a school-based practicum for pre-service teachers. In such cases, alternative modes of exposing pre-service teachers to the

type of daily work teachers do need to be considered. With sufficient planning, pre-service teachers could analyze samples of student work and assignments as well as teachers' yearly and daily plans. Faculty could write case studies of situations teachers regularly encounter and have pre-service teachers discuss or role-play various ways to handle them. Pre-service teachers could view video recordings of teachers using different teaching methods with learners in their classroom. Pre-service teachers could analyze specific classroom or teaching situations with guidance and feedback from their teacher educators (Ball & Cohen, 1999). These are just a few examples of how pre-service teachers can be given opportunities to make connections between what they are learning in their coursework and the day-to-day realities of being a teacher.

Principle 5. A good program develops and maintains strong linkages with local schools.

Learning about teaching requires meaningful relationships between schools, pre-service teacher education institutes, and pre-service teachers (Korthagen, Loughran, & Russell, 2006). The faculty of teacher education institutions need to establish and foster close relationships with schools located close to the institutions, ensuring that the school staff are respected partners in decision-making processes regarding the relationship and feel the relationship benefits the school. In the case of a practicum, pre-service teacher education program faculty should develop and maintain strong relationships with school supervisors with common knowledge and shared beliefs (Darling-Hammond, 2006b).

Possible partnerships may include establishing “professional development” schools near or on the campus of the institution.⁸ PSTE programs could be linked to the professional development programs offered to cooperating teachers at local schools; trained cooperating teachers at local schools could have a role in the supervision and assessment of pre-service teachers. Faculty from teacher education institutions could spend time in schools teaching, training, or doing research. Experienced teachers from schools could be seconded to PSTE institutions for a specific period to perform particular tasks. For example, an experienced, exceptional teacher could co-teach a course with a faculty member or be a guest instructor for a specific lesson or activity at a PSTE institution.

⁸ *Professional development schools (PDSs)* are innovative partnerships between PSTE institutions and schools in which school teachers and teacher educators work collaboratively to develop and implement pre-service teachers' field experiences.

Institutional-Level Principles

Principle 6. Teacher education institutions require sufficient infrastructure and resources to implement effective PSTE programs

Development of effective programs requires (a) developing standards for infrastructure and resources, (b) monitoring institutional standards-based capacities, and (c) developing plans based on such information related to resources and capacities. Some examples of infrastructure are furniture, a library, textbooks and supplemental learning materials, and building facilities. Institutional standards-based capacities might involve adequate human resources.

Principle 7. Effective professional development of teacher educators leads to better program development and implementation

Teacher educators need to be well-trained in order to be able to implement effective PSTE programs. However, many college-based teacher educators have not been provided adequate training or professional development opportunities.⁹ Teacher educators should also receive professional development opportunities to ensure that they are kept up to date on educational theory on effective teaching as well as how to teach adults. Possible areas for professional development of college-based teacher educators are subject content knowledge, pedagogy, pedagogical content knowledge, classroom management, assessment, and providing effective guidance and support to pre-service teachers during their field experiences. In Pre-STEP, for example, the professional development of teacher educators ranged from focused need-based workshops to scholarships for master's-level and PhD courses.

Listed below are concepts and skills that teacher educators need to possess to effectively prepare their pre-service teachers. As with all aspects of the key principles highlighted in this compendium, it is critical to consider these as suggestions and that they be adapted to the specific context in which the teacher educators work:

- How to manage time effectively
- How to use group work and collaborative learning effectively

⁹ MIITEP, for example, only provided a 2-week orientation course for college-based teacher educators.

- How to conduct active, hands-on teaching and learning
- How to best implement cognitive development and brain-based teaching
- How to identify and address gaps in students' learning
- How to gather data and conduct analysis and assessment to improve instruction
- How to teach in an engaging way, relevant to students' lives
- How to conduct action research. Action research¹⁰ is a reflective form of research that can be used by teachers in their classrooms. It involves a teacher identifying and exploring a specific issue of concern in his or her practice and implementing changes that address the issue (Jennifer & Zeichner, 1991).

Some specific abilities teacher educators need to possess and apply include:

- How to identify gaps in pre-service teachers' learning, including insufficient content knowledge and how to apply the pedagogical knowledge when teaching
- How to help pre-service teachers transition or complete role reversal (from student to teacher)
- How to observe and provide constructive feedback to pre-service teaching during practicum and microteaching
- How to apply educational theory to practice (applied)

Teacher educators should also be well-versed in new knowledge about teaching and about theories and application of andragogy.

Principle 8. Develop professional learning communities

A *professional learning community* refers to teachers and/or teacher educators from different institutions working collaboratively together to enhance their own learning and that of the pre-service teachers (see du Plessis & Muzzafar, 2010). In a professional learning community teachers and/or teacher educators communicate with each other, sometimes

¹⁰ *Action research* refers to a reflective process that commonly consists of assessing a need, planning action to address the need, and implementing the action while paying great attention to how the action addresses or does not address the need, in order to be a more effective teacher in the future.

coordinate content of lessons, and work collaboratively across colleges as well as subfields of teacher education, such as sharing different pedagogical approaches.

When PSTE occurs in a larger university setting, these communities, where possible, should be extended to include other departments and institutions where students learn subject matter content knowledge. Communicating within a professional learning community provides valuable opportunities for teacher educators to reflect on their own teaching practices and those of their colleagues as they learn from each other. In this way they can develop a critical understanding of professional practice, which can improve their teaching practice as well as other aspects of their work (Valli, 1997).

4 STEPS FOR IMPLEMENTING A PRE-SERVICE TEACHER EDUCATION PROGRAM

This section describes key steps to developing a donor-supported PSTE intervention. As with other suggestions in this compendium, these steps need to be adapted to the context of the intervention. Taken together, they can form the basis of an overhaul of an entire pre-service teacher education system. Given that most donor-supported projects are designed to improve a specific element or elements within a PSTE system rather than to reform the entire system, each step can also be considered as an individual activity even if holistic reform does not occur.

Step 1: Conduct Assessments of the Existing State of PSTE in Relation to Policies and National Priorities

The first step in addressing pre-service teacher education is conducting assessments to understand the current PSTE policies, mechanisms, and practices. These assessments will provide the basis for subsequent steps involving development of a strategic plan and identification of targeted interventions with its framework.

Assess national policies and priorities

To answer the question “where are we now?” in the policy environment, it is important to understand and assess a country’s current policies and recognize its national priorities. Policies may conflict with existing practice. For example, in the

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pre-STEP case, the Pakistani government created a policy that specified English as the medium of instruction from Standard 1 (i.e., Grade 1) onward despite teachers’ lack of competency in English and the wide variety of mother tongue or first language spoken by students. As a result, teachers often reverted to mother tongue instruction to teach their students, with the policy not being put into practice due to the realities of the context.

Disconnects may exist between policy and current priorities that need to be understood to ensure appropriate support to the PSTE system. Often the policy regarding entry requirements into the teaching profession may be higher than what many potential teachers are currently able to attain, and this may compete with the pressing need to increase the number of teachers in public schools. For example, a ministry of education might try to recruit teachers from a marginalized ethnic community where few students complete secondary school. However, if secondary school completion is a requirement to enter a PSTE program, then a different arrangement is needed.

Competing priorities may also exist. Local circumstances may result in some individuals prioritizing infrastructure development over developing the capacity of PSTE lecturers. Infrastructure development is often viewed as a quicker, more tangible, and easier task to measure, whereas professional development is often viewed as a slow, long-term, and difficult to measure reform. National priorities might also emphasize

the need to focus on a specific content area such as math or science, or the need to address the host country's pressing or immediate high-profile social concerns, such as high prevalence rates of HIV/AIDS, through education or conflict.

Assess the strengths and challenges of PSTE programs

An assessment of PSTE programs should be conducted to understand in detail the strengths and challenges of the existing program and gaps that need to be addressed. Infrastructure of the teacher colleges should be considered while conducting an assessment of the PSTE program, including physical learning and living conditions (e.g., learning resources, latrines, desks, dormitory facilities). Taking an analytical look at the existing curriculum of the PSTE programs is crucial in order to identify potential gaps in pre-service teachers' skills and knowledge. Going a step further, garnering opinions and assessing knowledge and skills of practicing teachers, head teachers, teacher educators, and district education officers or the equivalent, PSTE college administrative staff, and relevant MOE personnel, might shed additional light on the potential improvement needs of the PSTE program. Assessment of the existing PSTE system should also examine the recruitment and retention process for student teachers. In many developing countries, teaching is not a highly desired profession, and therefore motivating factors to attract and retain the best and brightest students should be determined. Therefore, the assessment should include examination of the pecuniary incentives, such as scholarships and salaries for student teachers, and nonpecuniary incentives, such as psychosocial support, nonmonetary motivators, and recognition.

Effectively communicating assessment results to a range of stakeholders in PSTE programs is critical for ensuring buy-in and using the results to inform any revisions to the PSTE program and related policies. Such communication can take the form of targeted policy dialogues that involve a presentation of assessment results and guided discussion on them. Reports from the assessments should also be provided to all the relevant institutions and individuals. Consider not only longer technical reports but also briefs, websites, articles, and other reader-friendly formats to ensure widespread dissemination.

The key principles of establishing a shared vision, creating enabling policies, eliminating fragmentation, as discussed previously, plus the understanding of the existing country context and the results of the assessment, help guide the development of a strategic plan of action for improving PSTE in a given country.

Step 2: Create a Strategic Plan—Targeted or Holistic

This step entails creating a strategic plan based on the assessment mentioned in Step 1. This strategic plan might be a targeted plan to improve specific aspects of PSTE, or it may be a holistic plan to improve the entire system. The type of plan created will depend on the country's needs and resources. When developing a strategic plan, a review of successful models of PSTE in other countries contextually similar to the host country may provide valuable insights.

A. Identify key stakeholders who should be part of the consultative process

The strategic plan should ideally be developed through a consultative process, involving key stakeholders from different levels in the education sector, including PSTE faculty and some experienced, effective teachers. Involving key stakeholders early in the planning process will also be important to enhancing support for and backing of the new strategic plan. Early involvement in the planning process will also enable stakeholders' varied concerns and interests to be voiced.



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Stakeholders included in the consultative process should be those with experience in the teacher education system as well as those who are most likely to be affected, either positively or negatively, by the new plan. The consultative process should be iterative, allowing key stakeholders to provide feedback at different stages as the strategic plan is being developed.

B. Determine the feasible allocation of human and financial resources, and the time required to implement the strategic plan

The allocation of time and human and financial resources should be discussed and reviewed by various stakeholders and implementers to ensure feasibility of the strategic plan. This may involve determining the cost of all the desired inputs, locating the gap between available resources and resources needed to meet all identified needs, and prioritizing the needs in terms of importance. For example, there may be a need to better equip science labs in PSTE institutions as well as a need to provide professional development opportunities for teacher educators. Although both needs may be identified through a needs assessment, the decision as to which needs will be addressed, to what extent, and at what stage within the intervention must be based on the amount of money, time, and human resources available.

C. Define roles and responsibilities of various actors for the implementation of the strategic plan

It is important to identify the roles and responsibilities of the multiple actors involved in PSTE, alongside the development or revision to the PSTE strategic plan. In some cases, it might be appropriate to restructure the management and/or create new positions or working groups to become accountable for a particular dimension of PSTE, as determined by the proposed strategic plan.

D. Disseminate plan to government officials, PSTE faculty, and staff at partnering schools to implement

Disseminating and communicating the new or revised plan to all appropriate stakeholders prior to implementation enables stakeholders to better understand the upcoming changes and helps ensure that they are prepared for them. Knowing what to expect will likely reduce administrators' and lecturers' resistance to the changes to their PSTE programs. Depending on the involvement of various college/school-level stakeholders, an orientation or training may be necessary to ensure a successful roll-out of the plan. Ongoing dissemination about implementation status is important for keeping all stakeholders updated and engaged.

Step 3: Implement the Strategic Plan

Like the key principles, the components of the strategic plan can be divided into the policy, program, and institutional levels. However, as mentioned earlier, the following needs to be considered in relation to the demands and constraints of the local situation. The interventions may be implemented at all of these levels simultaneously or as the local situation may demand. PSTE interventions can again be undertaken holistically or piecemeal, depending on the context.

A. Policy-level interventions

Interventions at the policy level will likely involve decisions at a national or regional level, often involving a governing body, such as the ministry of education. Policy-level interventions may involve, but are not limited to, the following:

- Determining the duration of the PSTE program by installing policies around minimum requirements for the length of PSTE programs and recommendations for entry requirements of student teachers
- Determining the number of public PSTE institutions needed in the country
- Determining accreditation requirements for PSTE institutions and how often institutions are evaluated for compliance of the requirements
- Determining degree or licensing requirements, including professional standards for teacher educators and pre-service teachers
- Aligning policies pertaining to financial allocations to various aspects of PSTE in accordance with the strategic priorities and budget

B. Program-level interventions

Program-level PSTE interventions will support the PSTE institutions to align their programs with accreditation standards set at the policy level. PSTE institutions might need technical assistance (TA) to revise various aspects of their program. Such TA support may involve working with the programs' leadership to do such tasks as adjusting the duration of various components of the program, revising curricular and other training materials to align with accreditation requirements, and revising course objectives to meet national professional standards. Programmatic alignment with standards

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can also include altering the curriculum and revising training materials. Furthermore, program-level interventions may entail establishing or improving a practicum program for pre-service teachers, developing strong linkages between PSTE institutions and local schools,¹¹ and developing the practice of providing mentors for individualized support to the pre-service teachers.

In addition to the above-mentioned interventions, the program-level work may also involve mentorship. Mentoring is deemed another critical component of PSTE, and the program should make a concerted effort to recommend strengthened mentoring opportunities. Similarly, development of professional learning communities (PLCs) is a support mechanism for all teachers and teacher educators implementing the PSTE programs. PLCs provide a space for both novice and experienced teachers to come together to discuss challenges and opportunities in the classroom and beyond through a cluster of schools or professionals in the same geographical vicinity.¹² These are some suggested interventions at a program level to provide as much support to student teachers as possible to develop them into effective pedagogues.

C. Institutional-level interventions

PSTE interventions at the institutional level will involve support for improvement of institutions at two levels: (a) the improvement of the capacity of human resources at the PSTE institutions, including teacher educators, and (b) the development of infrastructure at the PSTE institutions.

The work on the capacity development of human resources will typically involve designing need-based workshops for the teacher education faculty to sensitize them to the revisions in the programs and provide them with practical strategies to accommodate change in their teaching practices and in the content of their programs. In addition to the teacher educators, targeted need-based training may also be needed for the administration and support staff within the PSTE institutions.

Infrastructure improvements of the PSTE institutions will involve provision of missing facilities, typically targeting the libraries, classrooms, furniture, ICT resources, dormitories, latrines, and security arrangements. Furthermore, infrastructure of the teacher college facilities and accreditation requirements around infrastructure must be abided by in order to provide an environment conducive to effective teaching and learning.

Step 4: Monitor and Evaluate PSTE Inputs and Outcomes

It is vitally important for good implementation that all systems receive feedback about their performance to continue to improve and keep up an acceptable level of performance. In the case of PSTE programs, the institutions should typically develop systems of collecting data on the conduct of their programs, and of processing this information to produce useful assessment reports about their performance. Some of the work done to develop such systems may overlap with the monitoring and evaluation plan of the USAID. For example, as discussed in the section on indicators, the interventions will assess the performance of the PSTE programs on the relevant indicators. The project could use the collection of data on the performance indicators in ways that build the capacity of the PSTE institutions to continually collect and report on such data. Specifically, then, this step will involve helping each PSTE institution develop the capacity to conduct monitoring and evaluation of its programs and use this information to remain vigilant about the performance of their program. The substeps may involve:

- Developing context-specific indicators to monitor the conduct of courses, performance of student teachers, perceptions/opinions of the student teachers about the usefulness of the training they receive through a structured evaluation of the programs by the students, and evaluation of the programs by the local schools served by the PSTE institutions.
- Developing useful reports based on the data so collected by different participants in the PSTE system
- Developing the capacity of PSTE managers for evidence-based decision making to improve the performance of their programs

In an overhaul of the PSTE system, the data collection and analysis process related to needs assessment should be improved to provide more accurate information and guidance related to multiple types of needs assessments.

CHALLENGES AND LIMITATIONS

The challenges faced in the practice area of PSTE are seldom generic. In some countries inappropriate policies could pose critical challenges to improvement of PSTE; in others, barriers to reform may be rooted in social and cultural realities; and in yet others, the peculiar organization of PSTE institutions and education bureaucracies could block reform efforts.

The teaching profession in many developing countries is characterized by low status, corruption, social stigma, low salaries, and a distorted and unsupportive career path structure (Oplatka, 2007). The teacher recruitment and retention process is also a very complicated process. Teachers are often hired on a nonmeritocratic basis. A common misconception about pre-service teacher education is that it does not have a concrete impact on how teachers teach. There is a widespread belief that no special knowledge is required for teaching and that anyone is able to teach as long as they understand the mechanics of chalkboard use, which hinders the recognition that teacher education is important and necessary.

Most of these challenges are considered while formulating the principles at various levels. Therefore, the principles suggested can be used to anticipate and effectively address the challenges faced by the donor support programs in the PSTE programs. The lack of a coherent vision of PSTE and the absence of professional standards and effective accreditation regimes are examples of challenges in the practice area. The

participatory process suggested previously could help assess the extent and nature of challenges associated with donor support for development of a PSTE program and to determine a comprehensive response to such challenges.

Stakeholders: A Source of Both Support and Challenges

Both formidable obstacles as well as solid support for reforms can come from stakeholders and groups affected by the very process of reform. In Pakistan, for example, when teachers were trained to use interactive teaching and learning methods, including group learning, education district officers (EDOs) and other government officials would reprimand teachers for using methods other than lectures to teach their students. They claimed the teachers were not actually teaching. As a result, classroom-level change was difficult to sustain despite teachers' best efforts. Thus, when stakeholders are trained in or support a particular reform effort, it is much easier for teachers to use contemporary and interactive modes of teaching and learning.

Lack of Preparedness for PSTE Reform

Although the principles and steps presented above discuss training and communication as crucial to fostering buy-in from stakeholders, adopting skills or responsibilities may take time. Because behavior change is a gradual process, resistance to new responsibilities or structures may impede reform efforts. For



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example, a reform that innovatively combined pre- and in-service preparation in Malawi assumed that the teacher educators and the school principals and teachers could and would work in very close collaboration. Although this increased teacher educators', principals', and teachers' work and number of responsibilities, a lack of adequate preparation and resistance to the expanded responsibilities (without compensation) became important challenges. It is imperative to achieve prior consensus from teacher educators, principals, and teachers on their expanded roles and responsibilities and ensure that they are properly prepared to effectively fulfill these roles and responsibilities. In conjunction with this, a focus on intrinsic motivation is necessary to change behavior, especially in the long-run.

Balancing Resources and PSTE Program Length and Requirements

There is no consensus on appropriate length of initial teacher preparation courses. Success of teacher education programs, however, depends on how the courses are structured and what kinds of support teachers have during and after their training (Craig et al., 1998). Reform ideals that permeate the content and structure of the PSTE programs typically challenge the traditional practices. The advantages that may follow from reforms are not always experienced in the life of the programs supported by the donors. This is a challenge related to acceptability and ownership of changes in the content and structure of the PSTE programs. For example, Pre-STEP has invested considerable resources to gain stakeholder consensus on the content and structure of a new 4-year PSTE program. The project is still unfolding, and whether other pieces of the system will fall into place to ensure the project's enduring success is unknown.

Some developed countries, such as Germany and Singapore, require that prospective teachers have university degrees, and in the last two decades, the trend toward obtaining master's degrees before beginning teaching is increasing in those countries as well as others. One example of a long PSTE program is seen in Germany, whereby pre-service teachers must complete graduate-equivalent degrees in two different subjects and pass essay and oral examinations before they are able to begin the required two years of pedagogical training. This pedagogical training includes teaching seminars coupled with a mentored classroom experience (Darling-Hammond, 2005). These examples could be seen as part of a long-term vision for developing countries to strive towards, but recognize that significant resources will be needed to make the initial investment.

Despite the political, logistical, and financial costs of increasing the length of and prerequisites for PSTE programs in developing countries, in most cases it would be a beneficial long-term investment in improving education. It has been found that increasing academic requirements to enter the teaching profession ultimately results in better qualified teachers (Cobb, n.d.).

Alternatively, in China, for example, even though primary school teachers are only required to have a middle school level of education before entering formal pre-service training, the pre-service training required lasts for three years, and some schools even extend it to five years (Darling-Hammond, 2005; Craig et al., 1998). Other developing countries could also assess the merits of increasing the length of PSTE while decreasing the prerequisites to enter the PSTE programs. Thus, in the context of developing countries such as Malawi and Pakistan, even if pre-service teachers have not attained a high level of general education, it would be useful to compensate their deficiencies in general education with longer and more effective initial teacher training programs. In the situations where alternative or emergency certification is required to meet the high demand for teachers, a higher level of general education could be more desirable. However, requiring a greater level of general education or a longer pre-service education program might deter some from entering the teaching profession, thereby exacerbating the problem of teacher shortage in some countries. In any case, comprehensive assessment of the PSTE situation in particular countries will help the chief technical officer or other lead technical person determine the optimal strategy for support.

A. Consider monetary and nonmonetary incentives: scholarships and salaries for pre-service teachers

Monetary and nonmonetary incentives can be used to motivate individuals within the PSTE system. For example, to attract the best and brightest candidates to the profession, pre-service teachers could be awarded scholarships or teachers who serve as mentors could be given higher salaries. Other support mechanisms such as academic and psycho-social counseling enhance pre-service teachers' experiences and increase the likelihood of retaining pre-service teachers during their PSTE program (and when they become teachers). Part-time or accelerated programs might be considered to address specific needs, such as a high demand for teachers due to an influx of students after implementing universal free education. Exploring the type(s) of incentives that would be most effective in a particular context is an important element to consider when developing the strategic plan.

SUGGESTED INDICATORS OF SUCCESS

An effective monitoring and evaluation plan for PSTE programs will include several types of indicators to assess the effectiveness of the program, depending on the goals and scope of the program. The indicators can be drawn at the same levels at which the *first principles* are specified. Indicators will assess three broad areas:

1. The outcomes and impact of pre-service development interventions on the development of the institutional capacity of the PSTE institutions
2. The outcomes and impact of interventions on the curriculum and program development within the PSTE institutions
3. The outcomes and impact of pre-service program experiences on the work and lives of teachers going through these programs

A few exemplar indicators that may be used to assess the effectiveness and progress of a PSTE program are provided for each level.

Policy-Level Indicators

Policies provide the foundation for the direction and scope of a country's PSTE program, and indicators at this level should focus on change in the enabling environment.

- Increased number of PSTE enabling policies developed or revised. These policies will usually include, but are not limited to, the following:
 - Accreditation and certification requirements
 - National professional standards
 - Standards of infrastructural provision
- Improved ratio of accredited to nonaccredited PSTE programs and institutions

Program-Level Indicators

Indicators at this level focus on the overall expectations of the quality and delivery of pre-service teacher training programs and their ability to ensure teachers will be equipped to launch themselves in the teaching profession.

- Increased number of PSTE programs with PSTE curriculum aligned with national professional standards
- Increased number of teachers graduating from an accredited program or an increased number of teachers entering the teaching force
- Percentage of student teachers demonstrating increased use of preferred teaching practices during practicum or induction period. This indicator can be established by measuring the performance of teachers on instruments such as the Teacher Quality Index (TQI)¹¹ (see Appendix)
- Increased number of PSTE institutions with strong linkages with local schools¹²
- Percentage of observation visits showing practice teaching
- Increased number of PLCs providing mentoring and support, or increased number of student teachers accessing mentoring and support services
- Increased number of institutions with lecturer and institutional/departmental development plans

Institutional-Level Indicators

The institutional-level indicators will typically assess the positive changes in the institutional capacity to deliver high-quality PSTE programs that may be attributed to the project inputs. The indicators will assess the capacity in terms of changes in the quality of both human resources and infrastructure. Some suggested indicators at this level are

- Increased number of teachers/educators trained with government support
- Increased number of PSTE institutions with adequately qualified faculty (based on the agreed upon specific standards).
- Increased number of PSTE institutions with improved resources (e.g., teaching and learning materials, a library, Internet, computers)

11 A TQI is a composite measure of the quality of teaching practice. The quality is usually defined in terms of observable indicators.

12 Linkages with local schools will be conceptualized in specific contexts but typically can be viewed as increased interactions between the schools and faculties of education, including but not limited to the practicum placements in the local schools.

- Increased number of PSTE institutions with well-defined HR policies
- Increased number of institutions that use mapping, monitoring, and evaluating to improve their PSTE programs and institutions

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APPENDIX: TEACHER QUALITY INDEX (TQI)¹³

Field	Expectations of the Teacher's Ability	E	S	U	N
1	Prepares the lesson plan in advance.				
2	Implements the lesson plan by giving appropriate attention to student responses and staying focused on the main objective of the lesson.				
3	Uses different teaching methods during the lesson. (Evaluate each method; mark "N" if method was not used by the teacher.)				
	• Lecture				
	• Teacher-led demonstration				
	• Reading from a book/blackboard				
	• Class discussion				
	• Group work				
	• Hands on activities				
	• Student presentation				
	• Role play				
4	Involves students in class activities and encourages interaction among students.				
5	Uses teaching aids (including the blackboard).				
6	Uses the time allocated for the class in an effective manner. (The lesson has a beginning, middle, and an end; it is not repetitive or rushed.)				
7	Has a good command over the subject matter.				
8	Monitors and assesses the students during the lesson. (One example of assessment is to ask open-ended questions to the students; another example, if the students are doing group work, is to go to each group and ask appropriate questions.)				

¹³ The TQI was used by the USAID/Pakistan in its Education Sector Reform Assistance Program (ESRA) and by USAID/Malawi in the Primary School Support Program (PSSP)

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