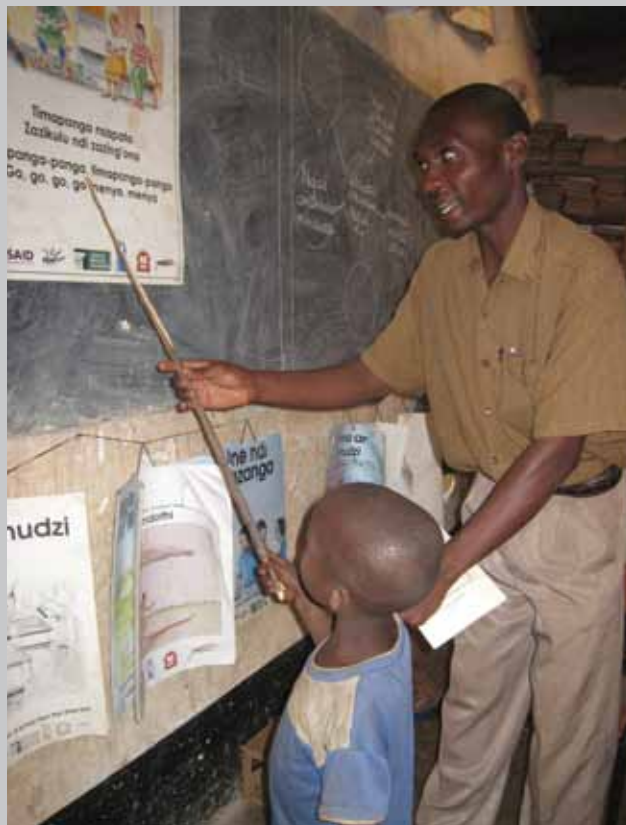![USAID - FROM THE AMERICAN PEOPLE]

EQUIP1
Educational Quality Improvement Program
Classrooms ▪ Schools ▪ Communities

First Principles:

Designing Effective Education Programs For In-Service Teacher Professional Development

Compendium

Credit: Cassandra Jessee/AIR

This *First Principles: Designing Effective Education Program for In-Service Teacher Professional Development Compendium* provides an overview and guidance for designing and implementing in-service 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 in-service delivery and performance of teachers in the classroom. 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 professional development and overcome the numerous challenges in raising the professional skills of teachers. The last section provides references for those who would like to learn more about issues and methods for supporting in-service teacher professional development. This *Compendium* version provides greater depth for those who are interested to know more on teacher professional development issues. There is a shorter companion piece called a *Digest*, which is a brief to quickly provide basic information on this topic.

Acknowledgements

Acronyms

ALP-BD	Active-Learning Pedagogies – Behavioral Dimension
ALP-CD	Active-Learning Pedagogies – Cognitive Dimension
AED	Academy for Educational Development
AIR	American Institutes for Research
BES	Basic Education Support
BESO I	Basic Education System Overhaul
BESO II	Basic Education Strategic Objective
CPD	Continuing Professional Development
DBE	Developing Basic Education
EFA	Education for All
ERP	Education Reform Program
EQUIP	Educational Quality Improvement Program
EXCELL	Excellence in Classroom Education at the Local Level
FTI	Fast Track Initiative
FCA	Formative Continuous Assessment
ICT	Information and Communications Technology
IIEP	International Institute for Educational Planning
INTASC	Interstate New Teacher Assessment and Support Consortium
LTTP	Liberia Teacher Training Program
MOE	Ministry of Education
NGO	Non-Governmental Organization
PRODEGE	Program for Educational Development of Equatorial Guinea
SIP	School Improvement Program
SSA	Sub-Saharan Africa
TEI	Teacher Education Institution
SCOPE	Standards-Based Classroom Observation Protocol for Egypt
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development

CONTENTS

Introduction

Teachers and the quality of their teaching are now widely recognized as the most critical of many important factors that combine to create overall quality of education (Darling-Hammond, 2000; Leu & Price Rom, 2006; UNESCO, 2004). This First Principles Compendium reviews in-service teacher professional development programs and the role they play in developing, supporting, and maintaining teacher quality. This issue is important because providing the programs and conditions that create better teachers has become a high priority in most countries that are rapidly expanding their systems of basic education to meet the Education for All (EFA) goals of enrolling all children and young adults in basic education by 2015 (UNESCO, 2004).

The issue of education quality in general has gained increasing prominence as the provision of education throughout the world expands rapidly (United Nations, 2009; UNESCO, 1999). Many countries that are close to accomplishing EFA goals recognize that quality has not kept pace with quantity and that quality is often undermined by success in drawing unprecedented numbers of children into schools. In these countries, as well as in countries with some distance yet to cover before achieving universal basic education, concerns have been raised about exceptionally low levels of student learning in under-resourced schools with severe overcrowding, limited learning materials, and teachers with little professional preparation (UNESCO, 2004, pp. 38–78). Evidence is mounting that in many countries that have achieved high participation rates in primary education, student learning falls far below government or international standards of achievement, and parents often withdraw their children from school when they see little evidence of learning (UNESCO, 2010).

Education quality, interpreted generally as student learning and behavior that accord with a country's policies, practices, and standards of achievement, is the product of many factors that combine in schools and in the teaching/learning process. Although they are all important (e.g., relevant curriculum, good learning materials, safe learning spaces, attentive parental support, strong school leadership), it is widely recognized that the most essential is the quality of teachers and teaching.[1] For example, the 2004 *EFA Global Monitoring Report: The Quality Imperative*, concludes the following:

> What goes on in the classroom, and the impact of the teacher and teaching, has been identified in numerous studies as *the* crucial variable for improving learning outcomes. The way teachers teach is of critical concern in any reform designed to improve quality. (UNESCO, 2004, p. 152; emphasis in original)

In its *Newsletter*, UNESCO-IIEP reiterates the point about the importance of teachers and teaching and emphasizes the need for in-service professional development, focusing specifically on Sub-Saharan African (SSA) countries:

> Teaching is arguably the strongest school-level determinant of student learning and achievement. It is therefore important to pay attention to teacher quality and, by extension, to teacher preparation and the continuous development of teachers … One formidable challenge for SSA countries today is how to expand the size of their teaching force while improving its quality. (UNESCO-IIEP, 2004, p. 5)

USAID, in its global *Education Strategy,* connects educational quality, teacher knowledge/skill, and professional development:

> Educational quality is a matter of the skills and knowledge that learners gain through schooling. … In general, quality is improved when the teacher understands the subject matter, knows how to teach it effectively, and is motivated to come to school every day and work to help children learn … Improving instruction is a complex task that entails a wide range of interventions, [including] … supporting improved [pre-service and in-service] teacher training … [toward] adoption of teaching methods that involve students in the learning process. (USAID, 2005, pp. 8–9)

Ideally, before starting to practice, teachers earn formal qualifications in preservice teacher education programs; after beginning to teach, they participate in ongoing in-service professional development programs throughout their careers. However, in many developing countries, teachers have little or

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1   As Good, Wiley, and Florez (2009) explain: "Effective teaching can be defined in many ways, including teacher behavior (warmth, civility, clarity), teacher knowledge (of subject matter, of students), teacher beliefs, and so forth. Here we define effective teaching as the ability to improve student achievement as shown by research" (p. 803). The authors list nine principles of effective teaching: (1) appropriate expectations, (2) proactive and supportive classrooms, (3) opportunity to learn, (4) curriculum alignment, (5) coherent content, (6) thoughtful discourse, (7) scaffolding students' ideas and task involvement, (8) practice/application, and (9) goal-oriented assessments (pp. 805–806).

no preservice preparation before starting to teach and may not have opportunities to participate in in-service professional development activities. It is not difficult to see why teachers with so little preparation and support fall short of acceptable professional standards in their work.

The important preservice phase of teacher learning is taken up in another compendium in this series (see Muzaffar & Rahim, 2011), while this compendium reviews in-service teacher professional development, including a wide variety of programs designed to promote and support the professional learning of teachers who are already employed and working in classrooms. **The goal of in-service professional development is to improve the knowledge, skills, and commitments of teachers so that they are more effective in planning** **lessons, using a variety of effective approaches in their teaching, and monitoring students' learning as well as in undertaking other school and community responsibilities.[2]**

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2   Williamson McDiarmid and Clevenger-Bright (2008, p. 134) provide a useful list of what researchers and educators, at least, "believe teachers need to know, be able to do, and care about …: (1) *knowledge*, including subject matter, pedagogical content knowledge, curriculum, pedagogy, educational foundations …, policy context, diverse learners … and their cultures, technology, child and adolescent development, group processes and dynamics, theories of learning, motivation, and assessment; (2) *craft skills*, including planning, organizing, and orchestrating instruction, using instructional materials and technology, disciplining pupils, managing groups, monitoring and evaluating learning, collaborating with colleagues, parents, community, and social service agencies; and (3) *dispositions*, including beliefs, attitudes, values, and commitments."

In-service programs come in several forms, with most programs falling within the following two categories:

- Sometimes, "in-service" refers to a prescribed, extended course of study, mirroring the preservice teacher education curriculum and leading to some level of formal qualification. This form of in-service program is provided for teachers who are already working in the classroom but are "unqualified" in the sense that they do not hold preservice certificates, diplomas, or degrees. These programs are found most frequently in countries with high percentages of teachers with no formal qualifications.[3]

- Usually, "in-service" refers to professional development activities for all employed teachers, those with and those without formal qualifications. These programs range from occasional, ad hoc workshops to continuous, comprehensive, career-long programs of professional learning. This compendium focuses on this form of in-service program.

There is no agreed-on terminology used for in-service professional development programs.

- **"Staff development"** and **"in-service training"**[4] are sometimes used for short-term workshops or short courses that offer teachers information or ideas, often abstract and unrelated to teachers' work (Cochran-Smith & Lytle, 2001). They can be based on the delivery of information by experts to teachers, whose role is largely passive.

- **"Professional development"** or **"continuing professional development"** (CPD) are used for a continuous, career-long program that encompasses more-comprehensive teacher learning and relies strongly on more-active forms of learning, sometimes facilitated in workshops but often in teacher groups at the school or cluster level (Villegas-Reimers, 2003).

Many countries are now shifting from the former to the latter approach to teacher professional development, often referred to as a "new model" or even a "revolution" in teacher development (Cochran-Smith & Lytle, 2001; Gidey, 2002; Villegas-Reimers, 2003). This compendium uses the terms "in-service professional development" and "continuous professional development" to describe the latter form of programs and activities designed to promote teacher learning.

In-service professional development programs help teachers acquire or deepen their knowledge about subject matter content, teaching skills, and assessment methods required to

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3   For example, in Equatorial Guinea, with support from PRODEGE (Program for Educational Development of Equatorial Guinea, funded by Hess Oil Company and implemented by the Agency for Educational Development [AED]), the Escuela Universitaria del Profesorado of the Universidad Nacional de Guinea Ecuatorial joined with el Ministerio de Educación, Ciencia y Deportes to organize a "Diplomado de la Enseñanza Primaria" program for primary school teachers who did not have formal pre-service teacher education. The program, with five modules (pedagogy I, pedagogy II, communication, mathematics, social and natural sciences), was initiated in March 2008. In April 2010, the 992 teachers who had completed the program were awarded the degree *Maestro Diplomado de Enseñanza Primaria*. When compared with other primary teachers, program participants were found more often to employ effective teaching methods and to have stronger relations with parents and the community (see Ginsburg, Bourdon, Rodriguez, Sanyal, & Tubman, 2010).

4   There is controversy over the use of the term "training" when it comes to teacher development programs. Because training often implies a more-mechanical or rote form of learning, or learning to follow predetermined routines, many educators will not use the term "training" in relation to teacher development, pre-service or in-service, that seeks to develop teachers as reflective practitioners who rely on understanding and knowl-edge, acquire a variety of skills, and make professional decisions about appropriate teaching/learning strategies and other aspects of their roles.

implement an existing or a new curriculum. Relevant activities include the following:

- Improving teachers' general education background

- Improving teachers' knowledge and understanding of the subjects they teach

- Understanding how children learn different subjects

- Developing practical skills and competencies

- Learning new teaching strategies

- Learning how to use new technologies

- Strengthening professionalism and ethics

- Providing knowledge and skills linked to the ever-changing needs of a dynamic society. (UNESCO Institute for Statistics, 2006)

In-service professional development programs are particularly important when *reforms in teaching and learning* are introduced. Many countries are seeking to shift from pedagogies based on rote forms of learning and memorization of facts to instructional practices promoting more-active forms of learning and emphasizing critical, analytical, and problem-solving skills. Such reforms can be successful only if all teachers, regardless of the nature of their initial preservice preparation, have the understanding, knowledge, and skills to implement new practices in the classroom (Barrow et al., 2007; Ginsburg, 2010).

The kind of professional learning and change of practice required by major reforms comes about most effectively when teachers learn over time through a process that combines new learning with structured follow-up practice in the classroom and individual or group reflection on, or analysis of, changing practice. It is now recognized widely in the literature of capacity building that teachers, or other professionals, rarely change their practice in significant ways as a result of participating in occasional or one-time expert-driven workshops (Craig et al., 1998; Farrell, 2002; Fast Track Initiative [FTI], 2008).

Although teachers must learn new ideas and methods, in reality, many must balance both old and new approaches because examination systems are often slow to change to accommodate a country's new active learning policies of curriculum and instruction; they still examine facts disconnected from meaning. In-service professional development programs should help teachers strike this balance rather than ignore the reality of what students must know to pass critical, life-determining, end-of-cycle examinations.

Yet another important dimension of teacher in-service programs is *mentoring* new teachers or supervising and supporting novice teachers during an induction phase, often the first 2 years of practice. In schools throughout the world, the high attrition of new teachers is often due to isolation and lack of support. Mentoring, either teaming of a new teacher with an experienced teacher, group mentoring through a school-level teacher community of practice, or both, has been shown to help retain new teachers and improve their effectiveness in their classroom and other roles (Johnson & Kardos, 2008).

The effectiveness of teacher in-service professional development programs is often questioned, particularly in relation to the high costs of even modestly budgeted programs. There is an urgent need, particularly in developing countries, for further study of the impact of different kinds of teacher professional development programs in terms of their effect on teachers' practices, students' learning, and other outcomes.[5] Although studies have shown that participation in professional development has a "significant positive impact on teachers' beliefs and practices, students' learning and the implementation of educational reforms" (UNESCO Institute for Statistics, 2006, p. 71), much of the evidence of success is anecdotal and focuses on changes in teachers' morale and commitment. Although this information is very important, concomitant evidence of the impact of professional development on teachers' knowledge and practice, as well as on student retention, achievement, and attainment, is needed. The Hewlett Foundation is presently funding major studies in five African countries that focus on these issues.

With regard to the importance of being able to demonstrate the value of teacher development programs, Porter, Youngs, and Odden (2001, p. 291) argue that "teacher assessments can clarify the goals for preservice and in-service teacher education and, in the process make them both more effective and efficient." With regard to assessing the impact of professional development on student learning outcomes (i.e., standardized

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5   Sprinthall, Reiman, and Thies-Sprinthall (1996) identify and discuss U.S.-based research related to the implementation and impact of the following teacher development approaches and programs: craft, essential schools, school-based management teams, teacher centers, expert knowledge, process-product, higher-order thinking, teacher as reflective practitioner, teacher as instructional peer coach, and teacher as action researcher.

test scores), Zeichner and Conklin (2005) stress, based on their review of the then-existing literature, the importance of "rul[ing] out explanations for differences in pupil test scores by such tactics as controlling for previous year's scores or matching teachers for comparisons" (p. 650) and remind us that "standardized test scores … only illuminate limited aspects of learning" (p. 703). This compendium draws together ideas and experiences of effective teacher in-service professional development from program implementation and from the scholarly literature. The compendium provides ideas for USAID, other donor agencies, and program implementers to work together with Ministries of Education (MOE) and local education institutions in designing and implementing programs that are responsive to national policies and are owned by the countries, thus creating the foundation for sustainability.

This compendium expands on many of the issues raised above. The next section describes 10 key principles that underlie the design of teacher professional development programs. Seven important practical steps for designing and implementing programs are then laid out, followed by an outline of some of the major challenges and limitations faced in designing and implementing teacher professional development programs. The final section briefly summarizes the main points of the compendium. The appendices present indicators of success, cross-sectoral linkages, essential reading, and references.

10 Key Principles in Developing Effective In-Service Teacher Professional Development Programs

Principles are defined as the foundational concepts, underpinnings, or main ideas that guide a given the practice area. The principles outlined below provide a framework for the elements of best practice for in-service teacher professional development. When these are considered during design and implementation, it usually facilitates successful programming.

Principle 1: Consider in-service programs as part of a continuum of professional development.

Preservice teacher education and in-service teacher professional development programs should be designed as a whole, a continuum of learning that starts with preservice education; includes periods of school-based inquiry and practice teaching; continues into an induction/mentoring period of introduction into full-time teaching (see Britton Paine, Pimm, & Raizen, 2003); and is followed up with a continuous program of career-long professional development, support, and supervision. Ideally, each stage builds on previously acquired knowledge and skills and is informed by performance standards. As illustrated in Box 1, standards for what teachers should know and be able to do have been developed in various countries and are being used to guide planning for preservice and in-service teacher development as well as to inform how individual and program success can be measured.[6] Further, professional development programs should be shaped by data about teachers' capabilities and their students' performance (see Schwille & Dembélé, 2007).

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6   In the mid-1990s in the United States, Roth (1996, p. 242) observes that the movement for standards for certification, licensure, and accreditation "is so pervasive and powerful … The ferment is seething in the context of a tension between reformers who pursue standard setting as sheer accountability and those who view standards as a vehicle for … transforming [teacher education] into a viable enterprise that educates for a profession."

Box 1: Standards for Teachers in the United States, Egypt, and Pakistan

Model Standards for Beginning Teacher Licensing, Assessment, and Development, United States:
1. Content Knowledge
2. Child Development and Learning
3. Diverse Learning Styles
4. Instructional Strategies
5. Learning Environment
6. Communication
7. Instructional Planning
8. Assessment
9. Professional Development and Reflection
10. Collaboration and Relationships

Interstate New Teacher Assessment and Support Consortium (INTASC). Washington, DC: Council of Chief State School Officers, 1992

Standards for the Educator in Egypt:
First Domain: Planning
1. Determining the educational needs of the student
2. Planning for greater targets not for detailed information and small objectives
3. Designing suitable educational activities

Second Domain: Learning Strategies and Classroom Management
1. Using learning strategies to meet students' needs
2. Facilitating effective learning experience
3. Involving students in solving problems and in critical and creative thinking
4. Providing an environment to guarantee equity
5. Effective utilization of diverse motivation methods
6. Managing learning time effectively and limiting time wasted (time on task)

Third Domain: Knowledge of Subject Matter
1. Being fully aware of the basis and nature of the subject
2. Fully knowing methods of research in the subject
3. Being able to integrate the subject with other subjects
4. Being able to produce knowledge

Fourth Domain: Evaluation
1. Self-evaluation
2. Student evaluation
3. *Feedback*

Fifth Domain: Teacher's Professionalism
1. *Ethics of the profession*
2. *Professional development*

National Standards for Education in Egypt. Cairo: Ministry of Education, 2003

Professional Standards for Initial Preparation of Teachers in Pakistan:
1. Subject matter knowledge
2. Human growth and development
3. Knowledge of Islamic values
4. Instructional planning and strategies
5. Assessment
6. Learning environment
7. Communication
8. Collaboration and partnerships
9. Professional Development & Code of Conduct
10. ICT Knowledge and Cognition

Knowledge, Dispositions, and Performance (Skills). Islamabad: Ministry of Education, 2009
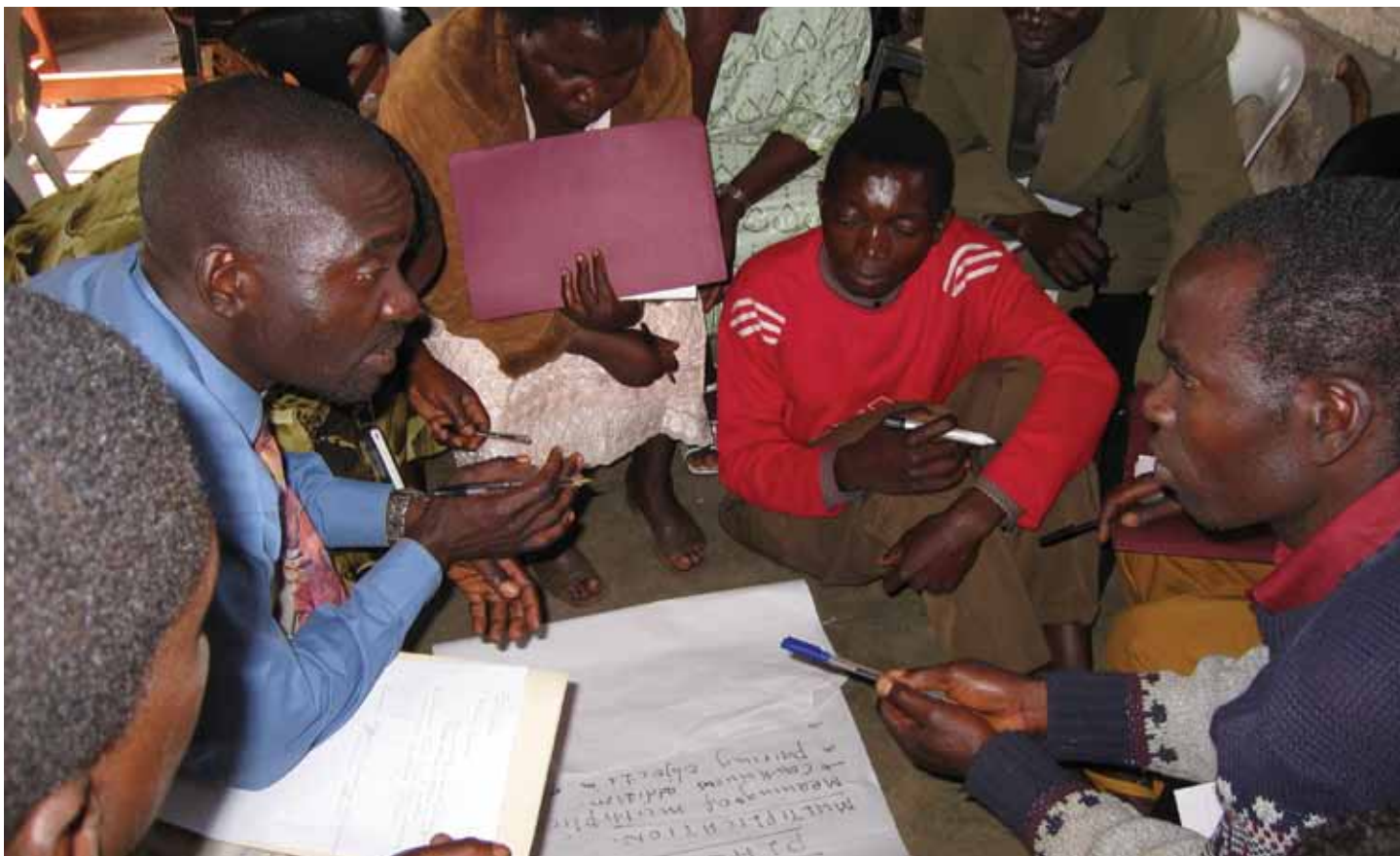
Coordination of this kind implies an official in-service or continuing professional development program, consisting of a curriculum or framework and a scope and sequence of topics and activities over time, which are linked to what is taught in the preservice program. Many countries already have such an official CPD program or are working toward one. Many countries welcome a variety of in-service professional development providers outside of the ministry or local education authorities, such as nongovernmental organizations (NGOs) or donor-funded programs, but require that programs correspond to the official CPD framework.

Coordinating in-service programs with preservice programs can present a dilemma. Preservice teacher education, teachers' colleges, and teacher educators tend to be more conservative and may change more slowly in response to reforms than in-service programs and their providers—local education offices, NGOs, and donor programs. Although in-service programs can be fragmented and of low quality, they can also

be innovative and experimental, adapting rapidly to reforms in policy and practice, such as active learning.

In-service professional development has made the strongest contribution in the inclusion of teachers in decision making, responsiveness to the realities of schools, and inclusion of teacher learning groups at the school and cluster levels[7]. In all these areas, preservice programs have often lagged behind. The continuum of teacher learning, therefore, does not mean that in-service should mirror preservice programs in content and approach; rather, it should be part of a coordinated program of teacher learning, all of which is linked to the school curriculum and based on present policies in teacher practice (including curriculum and teacher performance standards). The ideas and approaches of in-service programs can have a powerful backwash effect on preservice programs, particularly if representatives from institutions offering preservice programs

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7   Cluster refers to a group of schools and/or teachers within close proximity.

communicate and collaborate with individuals responsible for in-service programs—and not just in relation to teaching practice organized toward the end of the preservice phase.

Because much or all of an in-service professional development program that reaches all teachers will be carried out at the local level—in clusters or schools—guides and reading materials must be developed to support implementation and to ensure that content and approach accord with the CPD framework. In the example of the structure of a cluster- and school-based CPD program given below in Principle 6, three kinds of facilitation guides and some accompanying reading materials for teachers would be needed for cluster-level sessions, the school-level teacher study groups, and the teacher self-study. Developing and providing guiding material require good coordination, leadership, vision, and participation of stakeholders. This is a lengthy and expensive task (e.g., Boxes 2 and 3).

Box 2: Handbooks to Support In-Service Professional Development in Ethiopia

The preservice teacher education component of the USAID-funded EQUIP2 project (2008–2009), which built on previous Basic Education (2006–2007), Basic Education System Overhaul (BESO I), and Basic Education Strategic Objective (BESO II) programs (1995–2006), introduced innovative approaches to implementing formative continuous assessment (FCA) in the first cycle primary grades and in the teacher education institutions (TEIs). To support this effort, four FCA *Teachers' Handbooks* were developed, one for each of the first cycle grades, based on a preliminary needs assessment, initial writing of the handbooks, pilot testing of them, and development of a final version. Subsequently, the handbooks were printed and distributed to 515 linkage primary schools and 22 TEIs.

This component of the program also focused on building school teachers' knowledge in mathematics subject matter topics, focusing on topics that they and their students found difficult. To support this in-service professional development initiative, project staff worked with school and TEI educators to develop and pilot a *Mathematics Teachers' Handbook*, which serves upper primary teachers as a resource for subject matter content knowledge. A subsequent revised version was developed and translated into Amharic, Tigrigna, Afan Oromo, and Somali languages for further use by school teachers and TEI instructors (see EQUIP2/Ethiopia, 2009).

Principle 2: Involve teachers in planning and implementation of programs.

Planning for a comprehensive in-service teacher professional development program is normally driven by policy and curriculum reform and organized by national, regional, and local education authorities, often with support and assistance from international donors and NGOs (see Box 4). However, it is important that teachers, school administrators, supervisors, and preservice teacher educators be involved in the planning of both the structure and the content of in-service programs so that their and their students' needs are addressed. In particular, teacher involvement and the inclusion of classroom realities in program design promote teachers' ownership of and support for the programs. The inclusion of staff from institutions offering preservice programs in planning in-service programs helps provide the continuity described in Principle 1 and also brings teacher educators closer to the realities of schools and teachers, of which they sometimes have limited understanding. School administrators and regional or district officers responsible for supervising, supporting, and evaluating teachers should also be part of program planning to enhance their knowledge of the programs for which they are responsible and in which they play a key role. It is important to note that every country deals with planning and implementation of programs in their own unique ways, and as such some variability between countries and programs is likely to exist.

The widespread involvement of teachers, teacher educators, and other education professionals in planning and implementation of in-service programs does not happen at all in some countries and is well developed in others. Where it does not happen, it should become a goal. A way in to teachers' involvement in planning is including them in robust monitoring and evaluation of in-service programs and making adjustments in accordance with their input.

Teachers, ministry officials, school heads, and pre-service trainers can all be involved in the implementation of in-service programs by serving as trainers of formal trainings and mentors and resource persons at the school or cluster level. This promotes ownership and continued support of the program as well as developing a cadre of local experts who will help create lasting innovation (Craig et al, 1998).

Principle 3: Emphasize pedagogical content knowledge in designing program content.

In planning the content of programs to strengthen teaching, it is important to emphasize pedagogical content knowledge (Shulman, 1987), which involves a focus on subject matter content with its implications for pedagogy (planning, instruction, and assessment). Pedagogical content knowledge helps teachers understand curricular content better and be more effective in making a subject comprehensible to students. It serves as a bridge between teachers' knowledge of the subject matter and their knowledge and skill in planning and managing their interactions with students in ways that facilitate learning.

Pedagogical content knowledge is different from either general subject matter knowledge or general teaching skills because it is subject specific, relating specifically to the subject being taught and focusing on ways teachers strengthen and monitor students' understanding of the subject at different levels (Grossman, 2005). This is especially important in relation to active learning, which requires that teachers be aware of the different levels of understanding their students have reached in order to encourage the development of higher-order thinking skills.

Further, professional development programs benefit teachers most if they are based on strengthening teachers' knowledge of subject matter drawn from the curriculum that they are currently using in the classroom, combined with knowledge and practice of a range of teaching methods that encourage student understanding and learning. Programs should also emphasize teachers' competency in using the relevant language of instruction (see Box 5). Many in-service programs are criticized for concentrating almost entirely on method and encouraging the use of new active learning approaches (often exclusively group work) with very little attempt to include pedagogical content knowledge or strengthen relevant subject matter knowledge, let alone assist teachers in engaging in classroom practices in the appropriate language of instruction. Additionally, professional development programs should use teaching materials that are available to teachers in their schools. In many cases, teaching materials are extremely scarce. Encouraging the use of low-cost/no-cost materials (pebbles for teaching addition and subtraction or empty water bottles to make a water filter, for example) will help teachers more easily use new concepts in their classrooms.

Both preservice and in-service programs should be based mainly on the existing primary curriculum. Although this seems an obvious point, it is often not the case. Programs emphasize subject matter according to what is taught in the subject in upper secondary schools or at the university level with little or no reference to how the subject is handled in the primary curriculum and textbooks. Methods are often taught as abstractions or generalities (including active learning taught through lecture) and are not linked to how the primary curriculum can best be used. It is often left to teachers to put it all together when they reach their classroom, which is one reason teaching lapses into lecturing and emphasizing rote-memory learning. Introducing pedagogical subject knowledge into both preservice and in-service programs is a powerful way to start fixing this problem, although it requires teacher educators and in-service facilitators who both understand the concept and model it in their own teaching or facilitation.

> ### Box 5: Emphasizing School Curriculum and Language of Instruction in Indonesia
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> The teams working with USAID-funded Developing Basic Education (DBE) 2 in Indonesia centered CPD activities on the new curriculum. All activities were focused on mapping out the new curriculum across a semester; developing syllabi, lesson plans, and authentic assessments; and then implementing those lesson plans in the classroom while being observed by a colleague. This made the CPD content much more relevant and immediately useful for teachers (an adult learning principle), while still introducing new pedagogies (active learning). One CPD package of resource materials helped teachers learn how to teach in the language of instruction using active-learning techniques. The training package was supported by DVDs in the local language about "mother tongue interference" in learning a new language (e.g., Madurese when learning Bahasa Indonesian) and how a teacher can mitigate against this (see Tietjen et al., 2007).

Principle 4: Use adult-oriented models of active learning as the pedagogical design for in-service programs.

Adult-oriented models of active learning, which combine theoretical and practical knowledge acquisition, skill demonstration, and hands-on, practical, learning-by-doing, are most effective in facilitating professional learning for teachers (Feiman-Nemser, 2008; Floden, 2001; Sprinthall et al., 1996). Using this combination of approaches, with a strong emphasis on practical learning, models—and thus reinforces the learning of—the participatory and discovery approaches that teachers are currently encouraged to use in their own classrooms (see Box 6). Participatory learning is emphasized in larger group settings such as in-service workshops held at a cluster or district level and also in school-based communities of practice or teacher study groups that form to consolidate learning, practice new approaches, and analyze or reflect on practice. Adult-oriented models are generally most effective when new skills are built on teachers' previous knowledge and skills (Mezirow, 1991).

Box 6: Combining a Focus on Theory and Practice in CPD in Indonesia

The CPD resource and facilitation materials, developed and implemented in the Indonesian Developing Basic Education (DBE) 2, involved discussions of the theoretical underpinnings of active learning (learning styles/multiple intelligences, higher-order thinking) to help participants understand the "why." The materials also guided activities such as demonstration lessons, school visits and classroom observations, case studies, and role plays to learn the "how." The theory-to-practical-skills ratio was about 1:9, but even the theoretical sessions were interactive or active.

The DBE 2 program in Indonesia also provided opportunities for teachers to participate as if they were primary students in an active-learning classroom so that they could appreciate and internalize the difference between that and rote learning. Teachers then were asked to mock-teach active-learning lessons so that they could begin to understand what it takes to change their teaching practice, including seeing how much more stimulating it is for both the teacher and the students.

In accordance with adult-learning principles, all training packages in Indonesia were iterative —participants learned and experienced as learners the concepts of active learning, tried it out in the workshops and received feedback, tried it out in their classrooms and received feedback, and then came together to discuss their experiences in peer groups. For the Foundation Package, they were expected to develop and implement four lessons, one for each examinable subject and all based on standards from the curriculum (see Tietjen et al., 2007).

This approach does not mean that new knowledge or ideas are never presented directly, through reading or in a lecture or demonstration form. These methods are necessary at various points of teacher learning. Classroom management skills can be built through an "apprenticeship approach" involving "modeling, coaching and scaffolding,[8] supplemented with didactic instruction in basic concepts and skills, structured classroom observations, and the use of case materials and simulation exercises" (LePage et al., 2005, pp. 353–354).

What is important with teachers, as it is with all learners (see Box 7), is what they do with new knowledge—process, practice, analyze, modify, and take possession of it—through a process sometimes called "adaptive expertise." This process calls for developing a general understanding followed by trying to put this into practice, which lead to "expertise" and the ability to adapt knowledge to complex situations such as the classroom (Hammerness, Darling-Hammond, & Bransford, 2005).

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8   Instructional scaffolding is the provision of outside support to a learner in the early stages of learning, such as extra reading materials or tasks to consolidate learning. These outside supports are removed as the learner transfers to a phase of more-independent learning.

Box 7: Encouraging Active Learning Among Teachers, Teacher Educators, and Curriculum Developers in Ethiopia

The USAID-funded Basic Education Strategic Objective (BESO) I project in Ethiopia also developed materials for teachers so that they understood the new active-learning curriculum not only as a change of "technique" but as a paradigm shift, an entirely new way of thinking about knowledge and learning. These materials engaged teachers' interest, deepened their understanding of their practice, and led to more-thoughtful practice. The Ethiopian Ministry of Education, through the work of the Federal Task Force on Teacher Education, developed a requirement that teacher educators teach for a week in primary schools, thus giving them real experience to draw from in their teaching and in workshops and other activities they conducted with teachers. Similarly, curriculum developers in Tigrai Region taught some of the lessons in primary schools by using the textbooks they were preparing in order to make teaching or materials development more realistic and responsive to students' needs (see Ethiopia Ministry of Education, 2002; Tigrai Education Bureau, 1998).

Principle 5: Build reflective practice and action research within teacher learning communities.

In-service programs should be structured to emphasize *reflective practice,* which enables teachers to analyze their own and their colleagues' practice and the effects on learners (see Schön, 1987). Thus, it is important that CPD resource and facilitation materials provide guidance for including reflection in teachers' approach to their practice, conducting action research, developing teacher learning communities, and including mentoring or other forms of support for new or struggling teachers. Reflection can have teachers individually analyze the effectiveness of each class they teach, or it can be done collectively in organized groups of teachers studying practice and its relation to student performance (Fernandez & Yoshida, 2004). More informally, reflective practice can be intuitive, with individuals or groups applying their own judgment or critical self-assessment to teaching situations.

A more-formal kind of reflection is *action research*, in which individual teachers or groups of teachers use systematic research techniques to study a phenomenon in their school or in their practice, such as an investigation of the effectiveness of instructional practices or issues about student learning (e.g., why girls learn to read more quickly than boys in grade 2; see Pine, 2009). As teacher groups develop skills in conducting action research, community groups are often included in framing questions and collecting data (see Box 8).

Box 8: Recognizing Teachers' Action Research Activities

In the Tigrai region in Ethiopia, action research was found to be so useful that the education bureau decided in 2001 to establish an annual "contest" through which the teams of teachers that had conducted the "best" research in each district came to the regional capital to present the results of their research to education officials and other teachers and receive rewards for their schools, such as dictionaries and other books (see AED, 2001).

Engaging in reflective practice and action research usually leads to, or grows from, some form *of teacher learning communities or communities of practice*—communities of mutual professional support at the school level—and identifies teachers as "experts" within their professional area (Sprinthall et al., 1996). Teacher learning communities promote situated and contextualized learning in the following manner:

> Working together in communities, both new and more experienced teachers pose problems, identify discrepancies between theories and practices, challenge common routines, draw on the work of others…and attempt to make visible much of that which is taken for granted about teaching and learning. (Cochran-Smith & Lytle, 1999, quoted in Hammerness et al., 2005, p. 383)

Teacher learning communities are often central to a system of *mentoring* in schools through which more-experienced and successful teachers give special guidance and support to newer or less-successful teachers.

Principle 6: Include all teachers in learning opportunities and base most of the in-service program at the school or school-cluster level.

All teachers should be involved in professional development activities on a regular basis throughout their careers. To be effective and cost-effective, programs should be planned and implemented primarily at the school and school-cluster levels, facilitated by the teachers themselves, informed by a variety of professional development resource materials, and guided and supported by school administrators (principals in the role of instructional leaders), local supervisors (dedicated to supporting rather than just inspecting teachers), or staff attached to teacher colleges (see Box 9).[9] More-centralized workshops at teachers' colleges or district education offices held two or three times a year can be bridged by frequent, structured, school- or cluster-based activities that have teachers try out and analyze or reflect on the new practice learned in periodic workshops (Leu & Price-Rom, 2006).

Box 9: A School- and Cluster-Based CPD Program in Uganda

Uganda experimented with using the school- and cluster-based approach through the USAID-funded SUPER program (1993–2000). With decentralization a major part of the country's reform policies, SUPER worked with educators to create a school-cluster system anchored by teacher education colleges, which bring in-service activities to teachers in their schools or clusters. Former teachers, selected for experience and excellence, became "outreach tutors" based at colleges, each responsible for working with a cluster of about 20 schools. The tutors provide supervision that emphasizes teacher support, group facilitation, cooperative problem solving, and mentoring. They visit classrooms to observe and help teachers improve their practice and help facilitate teacher discussion groups. The tutors also train community mobilizers to encourage parents and other community members to support schools (Engels, 2001).

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9   According to Sprinthall et al. (1996, p. 667), in the mid-1990s in the United States, although "observation and feedback are acknowledged as crucial, there is a paucity of school settings in which such [supervisory guidance and support] are the norm." It is likely that this remains a challenge in countries with more-limited financial resources.

Box 10: Example of a Yearly, 9-Month CPD Cycle				
Month 1	*Month 2*	*Months 2–8*	*Month 8*	*Month 9*
School-level CPD *1 face-to-face CPD day (possibly including community members)*	*Cluster-level CPD* *1 or 2 face-to-face CPD days facilitated by one or several specialists*	*School-level CPD* *Monthly (or biweekly) face-to-face, facilitated CPD sessions* *Teacher study groups (biweekly or weekly)* *Ongoing teacher self-instruction*	*Cluster-level CPD* *1 or 2 face-to-face CPD days facilitated by one or several specialists*	*School-level CPD* *1 face-to-face CPD day (possibly including community members)*
Orientation; organization of CPD program with teachers, principal	*1- or 2-day face-to-face CPD at cluster level to orient all teachers to the program, discuss modalities, introduce new ideas and approaches*	*Monthly 1-day face-to-face CPD followed by teacher study groups and teacher self-study, facilitated by principal and school lead*	*1- or 2-day meeting at a cluster center or school to summarize the work of the year, discuss "lessons learned" from school-based sessions, consolidate and report on CPD to date, evaluate the program, and suggest modifications*	*Conclusion of the yearly program; evaluation and suggested modifications; awards or recognition for participation*

Box 10 is an example of a yearly, 9-month CPD cycle that includes all teachers. It holds two cluster-level meetings during the year for all teachers at which one or several specialists (expert teachers, teacher educators, or specialists from the local education authority) facilitate interactive sessions by introducing new material, discussing teachers' understanding of their practice, and drawing together lessons learned from the study and practice of previously covered material. The two yearly cluster-level sessions are followed up by (or bridged by) three kinds of school-based activities in which all teachers participate:

- Monthly (or biweekly) sessions, facilitated by the principal (as instructional leader), a department head, or an expert teacher, coordinated with topics in cluster meetings and based on CPD guidelines

- Teacher study groups (biweekly or weekly) coordinated with monthly sessions, bringing teachers together to study, discuss, and act on priority topics covered in the cluster or monthly meetings, based on CPD guidelines

- Teacher self-study that includes teachers studying material on their own or possibly in small interest- or subject matter-based groups, based on CPD guidelines

Credit: Cassandra Jessee/AIR

Principle 7: Incorporate strong instructional leadership by school administrators and local supervisors.

School administrators and supervisors also need to participate in parallel or combined continuous professional development programs. This participation will provide them with the same knowledge, skills, and commitments that teachers are developing through in-service programs and will enable them to exercise *instructional leadership*, that is, provide guidance and pedagogical support to teachers as they implement reform or improve practice within their schools, clusters, or districts (Barrow et al., 2007; Ginsburg, 2010). Such programs can also prepare school administrators and supervisors to work together with teachers—or with other school administrators, supervisors, and teacher educators (see Wagner, 1990)—to engage in action research (see Ginsburg & Megahed, 2006). The point is that teacher professional development can be reinforced and institutionalized through the professional development of school administrators and supervisors (see Box 11).

Box 11: Building Capacity and Commitment for Instructional Leadership in El Salvador

The Excellence in Classroom Education at the Local Level (EXCELL) project in El Salvador focused on improving student performance in 250 rural primary schools. A key component of EXCELL (2003–2005) engaged school directors in cluster-based programs designed to encourage and help them provide more-effective guidance and pedagogical support for teachers. This was complemented by some project staff involvement in working with teachers and directors and focusing on concepts and practices of active-learning pedagogies. Even after the relatively short period of project implementation, there was considerable evidence that directors and teachers became more knowledgeable about and committed to the new pedagogical approaches and that directors devoted more time to instructional leadership. However, only about 20% of the teachers were observed to have shifted their classroom practices in line with active-learning methods (AIR, AED, & Joseph P. Kennedy Jr. Foundation, 2005).

School heads, school supervisors, and other local education authorities can be a barrier to reform and quality improvement at the school level if they feel threatened by teachers' new knowledge and are not included in the in-service professional development programs in which teachers are participating. They can try to stop the implementation of a new practice if they do not understand it, and they can be uncertain of their mandate in relation to implementing reform policies if these policies are not endorsed widely and publicly from the very top of the education or the government system. The same is true of community members and parents. If they are not included in programs to develop public understanding of reforms, they often resist, seeing schools as newly active, even chaotic and "disorganized," and call for a return to passive, orderly rote-memory forms of learning. This is a good argument for their inclusion, or the inclusion of community leaders, in some of the cluster- or school-based continuing professional development activities. Moreover, political will can play a critical role in creating and supporting an environment conducive to strong leadership and management at the local level.

Principle 8: Link teacher in-service programs to a more-holistic school improvement approach involving community members in planning for and monitoring school quality.

School-based or cluster-based teacher professional development is an important element of decentralization[10], especially when linked with school improvement activities that involve community members as well as school personnel and students in assessing, planning, and supporting the schools' programs, teachers' teaching, and students' learning (Gillies & LeCzel, 2006). A holistic school improvement process often starts with teachers, school administrators, parents, and students developing together a common vision of what their school should and could be (see Box 12). This vision, in turn, leads to the communal development of yearly school plans and a system of monitoring and evaluation conducted by school and community groups to track progress. These plans usually contain expectations of student learning and the role of teachers in that learning. When teachers are involved in a continuing professional development program that is, in part, school based and uses teacher learning groups, a mechanism can emerge for teachers to develop strategies to fulfill and study efforts to implement school improvement plans.

In some countries, schools use "school report cards" to assess the school improvement process. These report cards are used by school-based study groups made up of students, parents, and community members who assess the school, focusing on educational quality issues. This process helps the community develop a shared, highly motivating view of the current situation and the changes they want to see. This approach is exemplified in the Escuela Nueva, an "active school" model instituted in Colombia in the 1970s and later in Nicaragua and Guatemala. This model is based on whole-school improvements and community participation, but it recognizes and cultivates the direct responsibility that teachers have for writing and designing materials that are adapted to local cultural and economic conditions and for training other teachers (Alvarado & LaVoy, 2006).

As good as school improvement processes can be in encouraging and empowering teachers, unintended consequences must be monitored. Teachers are sometimes evaluated by communities on the basis of performance that has nothing to do with teaching—for example, their willingness to engage in political canvassing or even working on the farms of community members. Student evaluation of teachers, often a part of this process, has sometimes influenced students to refuse to evaluate teachers until they have received their (presumably favorable) grades for the year (LeCzel & Liman, 2003).

> ### *Box 12: School Improvement and Teacher Professional Development in Namibia*
>
> Namibia has implemented a nationwide School Improvement Program (SIP), developed with assistance from USAID. This program brings together teachers, school leaders, and community members, with the support of district supervisors, to develop and monitor the progress of yearly school plans that focus on improved quality of teaching and learning. The SIPs include plans for school-based teacher in-service programs that promote the effective use of the curriculum that emphasizes students' active learning and critical thinking. The strength of this program is based on the schools' cooperative planning of programs and monitoring of results with the community. Learning achievement in schools participating in the SIP proved to be stronger than that in nonparticipating schools (LeCzel & Liman, 2003).

Principle 9: Successful participation in in-service professional development programs should receive official recognition by the ministry or local authority.

A system of formally recognizing successful participation in an in-service teacher professional development program should be put in place as part of the overall program design. If possible, this system should be coupled with increased financial rewards or advancement on a structured career ladder when improved classroom practice is demonstrated (see Box 13). A career structure for teachers rewards effort, commitment, and professionalism in addition to improved practice and increased student learning. However, this issue leads to the conundrum

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10 Decentralization refers to the delegation of power and responsibilities from a central authority to regional and local authorities

of cost. Not only are teacher professional development programs expensive, thus inhibiting implementation, but the cost implications of rewarding participation and increased quality of professional practice through teacher promotion or step up on a pay scale can be prohibitive in an environment of scarce resources. In environments where financial or career advancement are not a possibility as a means of recognition, the ministry and local authority can show recognition through other means, like certificate ceremonies or other culturally appropriate public recognition of teachers.

Although many teachers are intrinsically motivated to perform their work and to improve their professional knowledge and skill, they, like any other professionals, deserve fair compensation, good conditions of service, opportunities to increase their status and responsibilities, and high regard by society. Conversely, teachers are likely to take note and act accordingly if promotion and remuneration are allocated only on the basis of length of service or political connections rather than participation in in-service programs and improved performance on the job (Imig, Koziol, Pilato, & Imig, 2009). The sheer size of the teaching force is a problem because it is the largest personnel group on most governments' payrolls. Thus, the implications of raising the overall cost of employing teachers are significant, particularly in an era of rapid expansion of schooling and a steady increase in the number of teachers employed.

Box 13: Teachers' Cadre in Egypt

Law No. 155 for the Year 2007: Teachers' Jobs, Their Equivalents, and Participants in the Educational Process

Article (71): The job roll of teachers consists of the following positions:

1. Assistant teacher
2. Teacher
3. Master Teacher
4. Master Teacher (A)
5. Expert Teacher
6. Senior Teacher

Article (74): Appointment for one of the educational jobs mentioned in Article (70) of this law or promotion to higher positions or their equivalent as mentioned in this section requires meeting the conditions for holding them, obtaining the certificate qualifying for holding the job and passing the *training* and tests conducted for this purpose.

Article (75): An academy called "the Teachers' Professional Academy" will be established. It will have its public juridical personality and will be under the control of the Minister of Education. ... It will work in collaboration with faculties of education ... [in] awarding the eligibility certificates stipulated in Article (74) of this law.

Article (80): … Performance will be ranked as efficient, above the average, average, below the average, and poor. The preparation of this report should take into account the monitoring and evaluation systems based on performance standards, the results of the evaluation of a student teacher, his/her participation in improving the performance level of school work, the certificates and academic degrees which s/he obtains, the *training courses* which s/he passes, and the conferences which s/he attends in such a way as to improve his/her level and performance.

Principle 10: Consider the budget implications of building realistic and sustainable programs.

All in-service programs, even the most cost-effective, require considerable financial resources. MOEs, in coordination with international donor agencies and local and international NGOs, should be very realistic about the costs of in-service programs and ensure that adequate funding is available to initiate and sustain successful programs for continuous professional development. Cost is the main reason in-service professional development programs are often fragmented, ad hoc, and of varying quality. It is why in-service professional development is often provided to just a selection of teachers, not all teachers, thus relying on a usually relatively ineffective cascade mechanism through which the few teachers who attend in-service workshops are meant to disseminate—somehow— their new knowledge to the many teachers left behind. Because there is usually no support for, or a program through which, this "multiplier effect" happens, the cascade is rarely effective. In some countries, these programs are left entirely in the hands of NGOs or donor-funded programs because of prohibitive cost (see Box 14).

Box 14: Creating a Foundation for Sustainability of CPD in Namibia

The USAID-funded Basic Education Support (BES) III program, which built on accomplishments during BES I and BES II, supported the Namibian Ministry of Education in planning and implementing regional-, circuit-, and cluster-level professional development activities focused on enhancing content knowledge and pedagogical skill in mathematics, sciences, languages, and life skills. The number of educators participating in such activities increased from 3,009 in 2005 to 15,835 in 2009. Equally important, BES III gradually reduced its level of financial and technical support for the MOE in these activities, so that "a sustained system of site-based professional development on locally identified needs [was] thoroughly in place by the close of the project" (EQUIP2/Namibia, 2009, p. 20).

Credit: Cassandra Jessee/AIR

7 Steps in Implementing an In-Service Teacher Professional Development Program

The seven steps below are derived from the principles outlined in the previous section. Some of the steps relate specifically to only one principle, whereas others draw on two or more principles. The approach is meant to give practical steps to take when designing and implementing effective in-service teacher professional development programs.

Step 1: Include all stakeholders in program design.

Design the program in partnership with the government (i.e., national, provincial, district ministry officials; staff development units), current and potential providers (e.g., colleges of education, NGOs), international donor agencies, the private sector, and beneficiaries (teachers, school administrators, supervisors).

Step 2: Base design on existing policies and programs.

Develop, monitor, and revise programs on the basis of the existing primary curriculum, existing in-service policies and programs, current reform agendas, and assessments of the needs of educators and the performance of students.

Step 3: Learn from successful programs in similar countries.

Search for and make available ideas for structure, content, and materials drawn from successful programs in other similar countries (see Box 15).

Box 15: Reforming the Inservice Education and Supervisory Support System in Egypt

With the support of the USAID-funded Education Reform Program (2004–2010), key personnel in Egypt's local and national "training" and "supervisory" systems developed a Framework for a Professional Development System (Education Reform Program, 2005). In developing the Framework, personnel gathered information on current practices in Egypt and other countries and consulted with teachers and head teachers regarding their experiences with and appraisal of past professional development program and the existing professional development "system." The Framework identified a set of core tasks to be undertaken by a range of entities at different levels of the system (school, idarra/district, governorate/province, and nation):

1. Disseminate professional development culture
2. Develop professional development standards
3. Set a professional development strategic plan
4. Establish a professional development database
5. Develop professional development training cadres
6. Assess professional development needs
7. Develop and implement professional development plans and programs
8. Establish a system to monitor and evaluate professional development stages
9. Manage the professional development database
10. Coordinate and promote integration among all professional development entities
11. Find additional professional development funding sources
12. Make policy for scholarships and mechanisms for benefits
13. Utilize academic and educational research
14. Vitalize community participation
15. Accredit professional development programs

Although the Framework was not adopted fully as policy by the Egyptian government, key elements were incorporated into the 2007 Strategic Plan of the Ministry of Education. For example, the Strategic Plan focused on establishing a teacher cadre (with definitions of the capacities of teachers required for different career stages) and creating a Teachers' Professional Academy (with standards and procedures for coordinating and evaluating the design and delivery of in-service programs of various entities; see Megahed & Ginsburg, 2008).

Step 4: Design a program that includes all teachers.

Organize in-service programs that reach all teachers at the school or cluster level with frequent (as budget and timing allow) in-service activities, complemented in an integrated manner with local, provincial, national, and international workshops and conferences.

Step 5: Develop good support materials.

Facilitate the collaborative development of support materials for the program, to be used when learning in group activities and when adapting and implementing the practices in teachers' classrooms.

Step 6: Start small, learn, and scale up.

Start small and experiment with program design on a pilot basis; monitor and evaluate such efforts; conduct policy dialogue and advocacy for successful programs; and then refine and scale up the programs and the in-service system. This is a form of working backwards from action to system, that is, learning from initial actions and then proceeding to build step-by-step a new system that is informed by the reality of implementation, rather than attempting to build a system based on plans that have not been tested. In the rush to implement, the latter is often the way new programs are introduced, perhaps built on "lessons learned" or "best practices" from other countries but not based on or tested in the reality of the implementing country.

Credit: Cassandra Jessee/AIR
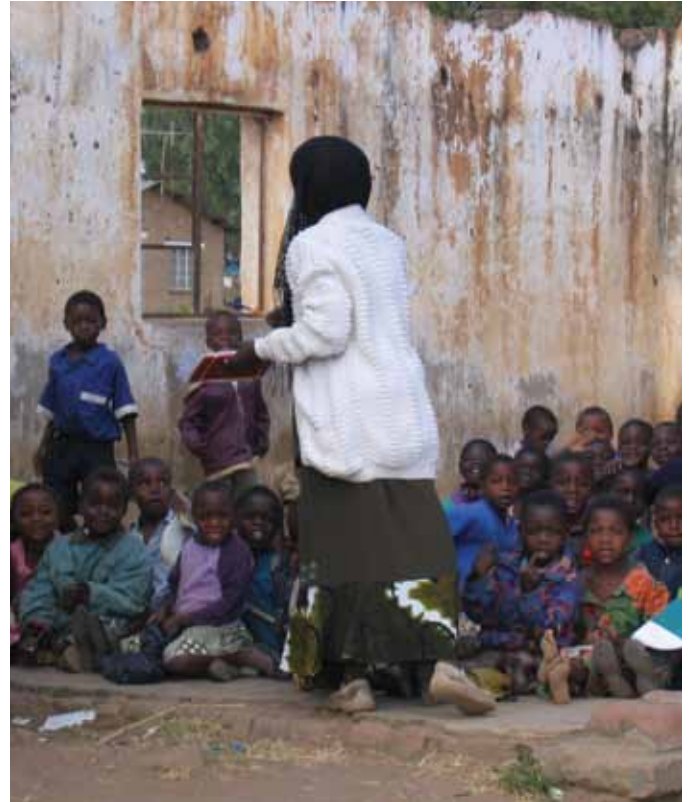
Step 7: Support improvement of teachers' conditions of service.

Engage relevant policymakers and other stakeholders in dialogue focused on educators' compensation, conditions of service, and career structure to enhance incentives for teachers, administrators, and supervisors to participate in in-service activities, to use what they learn to improve their professional practice, and to remain in the profession. Promote the design of a system that formally recognizes teachers' successful participation in in-service professional development programs.

Challenges and Limitations

The challenges outlined below pinpoint some of the problems often encountered when building or improving a teacher professional development program. The challenges occur when seeking to follow the foregoing principles and take the suggested steps.

Planning and designing collaboratively

Designing in-service programs is a complex process and requires careful and collaborative planning, phased-in implementation, and strong monitoring and evaluation.

Designing programs that are relevant for both new and experienced teachers

Meeting the needs of both novice and experienced teachers in the same program is a challenge. Because professional development should be provided throughout educators' careers, yearly programs must be flexible enough to cover both previously covered topics (for new teachers), new topics (for all teachers), and specialized or advanced topics (for experienced teachers with particular responsibilities). In other words, the same program cannot be rerun year after year for all teachers.

Including budget implications in all planning to create sustainability

Cost is a major problem and often determines whether a program is attempted at all and, if attempted, whether it is successful in the short run and sustainable in the long run. The costs of program design and materials development are considerable, but the main cost is running the program. In many cases, costs include paying educators per diem and travel expenses (when away from their own school). Unless this cost is sustainable, other mechanisms for encouraging participation in programs must be institutionalized. For instance, on a policy level, successful participation in in-service programs could be a requirement for continued employment, or participation and demonstrated improvement in teaching practice could be the criteria for salary increase and promotion. Another strategy might be to involve the private sector in such endeavors, where applicable.

Scheduling programs when the maximum number of teachers can participate

Timing is always a challenge and has cost implications. Do teachers and other educators participate in in-service activities during normal working hours (this usually is not permitted), at the end of the school day or on weekends (this often discriminates against female teachers), or on special in-service days (when students do not come to school)? Timing during the calendar year is also a challenge, especially in countries that have different calendars for different regions.

Emphasizing effective and realistic approaches to active learning in program content

Active-learning principles are now part of many countries' policies of teaching and learning and thus are promoted in most preservice and in-service programs. Because they represent a major paradigm shift, active-learning pedagogies are often misunderstood, partially comprehended, or superficially or poorly implemented. Additional challenges for implementing active-learning pedagogies include a discrepancy between what is taught and what is examined, overcrowded classrooms that make interactive methods difficult, limited instructional materials, and contradictions between the evaluation frameworks that school administrators and local supervisors use and teachers' changing and improving practice.

Suggested Indicators of Success

Principle 1 (consider in-service programs as part of a continuum of professional development) suggests that a country's standards for what a teacher should know and be able to do should guide all programs for teachers, thus creating a continuum of teacher learning from preservice teacher education through the induction phase to career-long in-service teacher professional development. At the base of most sets of standards for teachers are improved knowledge, practice, and commitment that lead to better student learning according to the policies and programs of a country. The suggested indicators of success below go directly to this set of outcomes of teacher professional development programs. The nine principles, seven steps, and list of challenges are all aimed at preparing teachers and other educators to achieve these outcomes.

- Improved teacher practice in accordance with national, regional, and district policies or standards (observation)

- Improved teacher knowledge of national policies, subject content, teaching and assessment practices, and relations with parents and community members (interviews and questionnaires/tests)

- Improved teacher commitment and sense of professionalism (observation and interviews)

- Improved participation of students in the class and demonstration that they are using higher-order cognitive skills (observation, interviews, learning assessments)

- Improved student learning in defined areas (observation, interviews, learning assessments)

In identifying and considering which indicators to use, how to validly measure them, and what the most appropriate interpretation and use of these indicators are, one can draw on the extensive, but by no means completely successful, experience in assessing teachers in developed countries such as the United States (e.g., Porter et al., 2001). Further, worthwhile initiatives can be found in developing countries for designing, conducting, and using the results of teacher assessment (see Box 16).

Box 16: Standards-Based Classroom Observation Protocol for Egypt

One source of evidence for examining the impact of in-service professional development activities on teachers' instructional behavior was developed in Egypt with technical support from the USAID-funded Education Reform Program (ERP). This is the Standards-Based Classroom Observation Protocol for Egypt (SCOPE). The SCOPE measures teacher enactment of reform-based teaching methods, which are aligned with the "Educator Standards" in the N*ational Standards for Education in Egypt* (MOE, 2003). Ratings by supervisors, who were specially trained as observers, vary from 1 to 5:

> [R]atings of "1" for teacher behaviors characterize instruction that is traditional; authoritative; teacher-centered; non-collaborative or cooperative; mostly chalk-and-talk … [R]atings of "5" for teacher … behaviors characterize classrooms in which instruction is reformed; participatory; student-centered; collaborative and cooperative; active; inquiry-based …. (Abd-El-Khalick, 2005, pp. 2–4).

A subset of the items focused on students' involvement in creative-thinking and problem-solving activities during lessons. However, the following teacher behavior items can be organized into scales, representing two different dimensions of active-learning pedagogies:

Active-Learning Pedagogies – Behavioral Dimension (ALP-BD):

1. *Engages students in carefully structured cooperative learning experiences*

2. *Implements instruction that targets the development of students' social and collaborative skills*

3. *Actively ensures the participation of all students in learning activities irrespective of their sex, achievement level, special needs, giftedness, and other differences*

4. *Uses diverse instructional strategies to promote active student participation in learning*

5. *Encourages students to have a voice in the learning environment*

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Box 16 (continued)

Active-Learning Pedagogies – Cognitive Dimension (ALP-CD):

6. *Effectively asks probing and open-ended questions that encourage thinking, and help students explicate their thinking*

7. *Provides students with structured opportunities to reflect on their own learning*

8. *Provides students with opportunities to practice higher-order and critical-thinking skills*

9. *Provides students with opportunities to develop problem solving skills*

SCOPE was administered annually (2005–2010) in classrooms of a sample of ERP-supported and other schools in seven governorates in Egypt. Although this was done primarily as part of the project's evaluation, a simplified version of the observation protocol was developed, field tested, and adopted by the Ministry as the official instruments for assessing teachers' behavior (see Megahed, Ginsburg, Abdellah, & Zohry, 2009).

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Credit: American Institutes for Research

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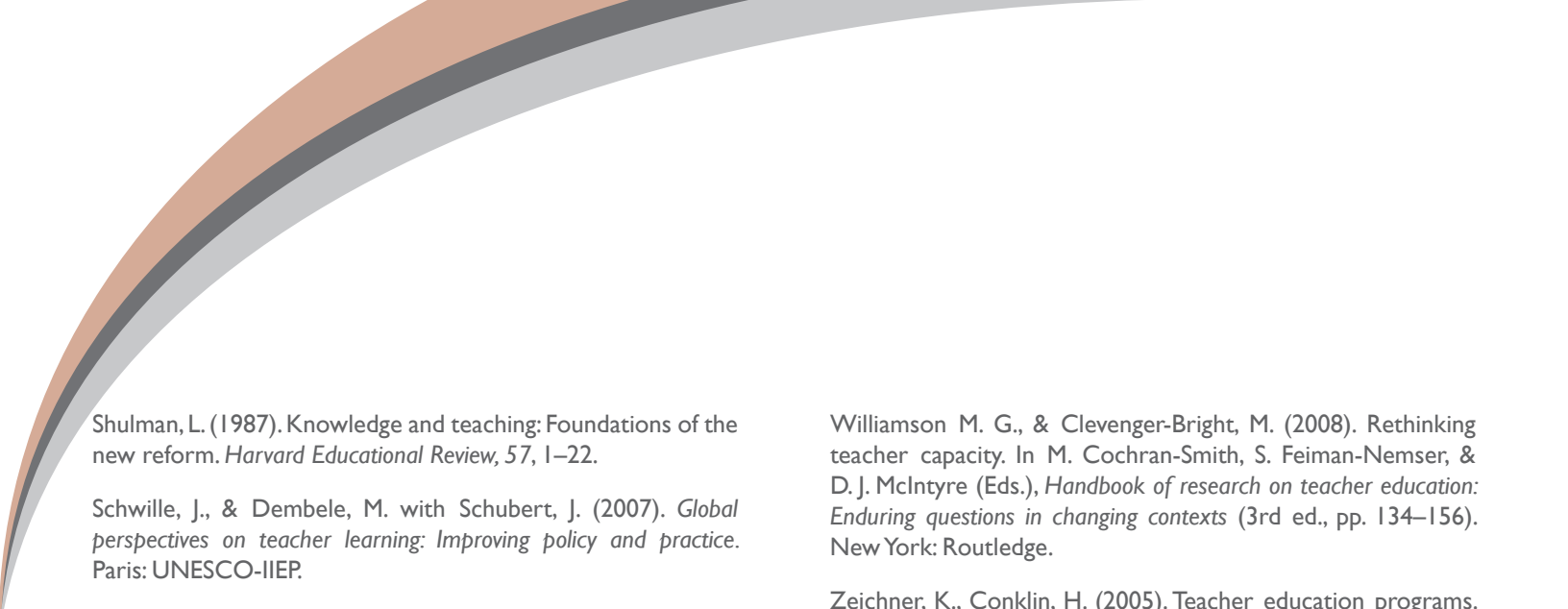
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