

HUMAN DEVELOPMENT
PERSPECTIVES

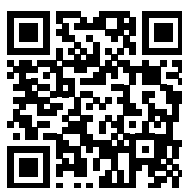


From Prospective to Prepared Teacher

A Global Study of Initial Teacher Education

From Prospective to Prepared Teacher

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HUMAN DEVELOPMENT PERSPECTIVES

From Prospective to Prepared Teacher

**A Global Study of Initial
Teacher Education**

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Foreword

Education is the foundation on which individuals, communities, and nations build their futures. At the World Bank, we are privileged to witness the transformative power of learning every day—from a child’s first days in a classroom to the job-relevant skills that open doors to meaningful work and a better life.

Yet too many young people still face barriers to quality education and the opportunities it brings. Teachers stand at the heart of the solution. Their dedication, creativity, and resilience inspire students and shape the leaders, innovators, and citizens of tomorrow. Preparing and supporting teachers is not just an investment in education—it is an investment in jobs, growth, and the promise of a better future for all.

This report, *From Prospective to Prepared Teacher: A Global Study of Initial Teacher Education*, takes a close look at how countries prepare their primary school teachers to deliver foundational learning—those skills in literacy, numeracy, and socioemotional development that set children on the path to lifelong success and that the World Bank has placed at the core of its jobs and growth agenda. The study highlights the importance of strong initial teacher education (ITE) as the bedrock for equipping teachers with the subject knowledge, pedagogical skills, and professional identity needed to help every child master the basics.

Drawing on global evidence, the report is framed around five key principles for building effective ITE systems: making ITE programs attractive and selective; providing relevant and impactful ITE program content by skilled teacher educators; incorporating quality field placements for teaching experience and practice; aligning institutions for responsive, efficient, and quality-driven ITE; and enhancing quality assurance processes to maintain

high standards in ITE. Together, these principles are designed not only to strengthen education systems but also to ensure that the teachers entering classrooms today are equipped to deliver the foundational skills that fuel economic opportunity and job creation for the next generation.

As we look ahead, our commitment is clear: to work alongside countries and partners to ensure that every learner has the chance to succeed and that all teachers have the preparation and support they need to make a difference. This report is part of a broader World Bank effort to reduce learning poverty—the inability to read and understand a simple text by the end of primary school—and translate global evidence into system-level reform. By investing in the preparation of primary school teachers, we can unlock the potential of foundational learning, reduce learning poverty, and build the human capital that drives jobs, growth, and a more inclusive and prosperous world.

Luis Benveniste
Acting Global Director for Education, World Bank
February 2026

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The report draws on 11 country case studies on ITE, each of which is published separately and includes its own acknowledgments.¹ The team is grateful to all those recognized in the case studies for their contributions to this body of work.

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1. The case studies are available at <https://www.worldbank.org/en/topic/teachers/publication/prepared-teachers-global-study-of-initial-teacher-education>.

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A Note on Terminology

Teacher preparation systems and their terminology differ around the world. The first stage of a teacher’s career development is known by various names, such as pre-service teacher training, pre-service teacher education, initial teacher preparation, and teacher education. This report uses the term “initial teacher education” (ITE) while recognizing that different countries may use different terms. The term ITE was chosen because it is widely recognized internationally and encompasses strategies complementary to institution-based ITE such as apprenticeship models, where ITE occurs while in service. Furthermore, it conveys professionalism and career-long learning in the teaching profession.

Glossary

Coach	A professional who works with teachers or students to improve specific skills, strategies, or performance in the classroom.
Complementary ITE strategies	ITE programs that are not based in traditional institutions such as universities or teacher training colleges. These strategies include, for example, fast-track or emergency training, school-based training, and school-based residency programs. They are typically designed to address teacher shortages and to attract candidates with diverse backgrounds and expertise.

Content (in ITE program)	The main topics, themes, or modules covered in the program or course.
Continuous professional development	The ongoing process through which in-service teachers enhance their knowledge and skills for teaching throughout their careers. This process ensures that teachers remain updated on the latest education research, curriculum, teaching methods, technologies, and evolving needs of students and the education system.
Coursework	Work that is assigned or completed as part of the requirements for finishing a course. This includes written assignments, projects, and other related activities.
Field placement	A supervised, practical learning experience, usually in a school, designed to progressively develop student teachers' skills. In this setting, student teachers engage in real classroom or educational environments, where they observe, assist, and teach under the mentorship of an experienced teacher. This experience allows them to apply the theories and methods learned in their ITE program. Terminology for field placement varies globally, with alternative terms including "practicum," "clinical practice," "internship," "field experience," "student teaching," "teaching practice," and "pre-service teaching."
Induction	A structured process that supports and guides new teachers as they transition into their teaching careers. It typically spans the first one to three years of teaching and includes support from mentors, professional development, and resources to help acclimate to the school environment, refine teaching skills, and build confidence.

Initial teacher education (ITE) program	Initial teacher education is the first stage in a teacher's career development. It takes place before teachers enter the profession, often as a condition for becoming a qualified teacher. It is where they acquire the core knowledge and skills for teaching, develop their professional identity, and establish the foundation for their career-long learning and professional growth. Typically, ITE programs include university or college-based courses and field placements, with pedagogy studies either concurrent with or consecutive to subject matter studies. Complementary ITE strategies, such as fast-track, emergency, or school-based training, may overlap with in-service teaching. Globally, this stage is referred to by various terms, including "pre-service teacher training," "pre-service teacher education," "initial teacher preparation," and "teacher education."
In-service teacher	An individual who is actively working in a teaching role.
Mentor teacher	An experienced teacher who is currently working as a classroom teacher and who provides guidance, support, and professional development to a less experienced teacher or student teacher during a field placement. The terminology for mentor teachers varies globally, with alternative terms including "cooperating teacher," "supervising teacher," "host teacher," "master teacher," "clinical teacher," "guiding teacher," "practicum supervisor," "field instructor," and "support teacher." Differentiating between the mentor teacher working in the classroom and the supervising teacher educator from the ITE institution can be useful because both play roles in supporting the student teacher in the classroom.
Microteaching	A scaled-down teaching experience that focuses on specific teaching skills in a controlled setting, which helps to minimize the complexity associated with regular teaching.

Pedagogy	The methods and practices involved in teaching, covering both theoretical and practical elements.
Pre-service teacher	An individual who is either currently enrolled in or has completed an ITE program but has not yet commenced employment in a teaching position.
Student teacher	An individual who is currently enrolled in an ITE program.
Supervising teacher educator	The teacher educator based at the ITE institution who oversees the student teacher during their field placement in a school.
Teaching methods (in ITE program)	The various instructional strategies used in an ITE program including lectures, discussions, hands-on projects, group activities, and field placement.

Abbreviations

ABC+	Advancing Basic Education in the Philippines
AI	artificial intelligence
BTC	Bahrain Teachers College
CPD	continuous professional development
EI	Education International
FLBP	Funza Lushaka Bursary Programme
GCE	General Certificate of Education
GCSE	General Certificate of Secondary Education
GPT-4	Generative Pre-trained Transformer 4
HEI	higher education institutions
ICT	information and communications technology
INEE	Inter-agency Network for Education Emergencies
ISCEP	International Classification and Teacher Training Programmes
ITE	initial teacher education
LGSTEP	Localized Government-Sponsored Teacher Education Program (China)
LTTU	lead teacher training university
MEN	Ministry of National Education
MOE	Ministry of Education
MRTEQ	Minimum Requirements for Teacher Education Qualifications (South Africa)
NAPTOSA	National Professional Teachers' Organisation of South Africa
OECD	Organisation for Economic Co-operation and Development
PGCE	Postgraduate Certificate in Education
PGRI	Teachers Association of the Republic of Indonesia
PISA	Program for Instructional Student Assessment

QA	quality assurance
RPL	Recognition of Prior Learning (Madagascar)
SABER 11	State Examination of Basic Education Primary and Secondary (Colombia)
SAT	Tutorial Learning System (Sistema de Aprendizaje Tutorial, Honduras)
SDG	Sustainable Development Goal (United Nations)
Shanghai-FIT	Shanghai Funds-in-Trust
STEM	science, technology, engineering, and math
STEP	Strengthening Teacher Education and Practice
TALIS	Teaching and Learning International Survey
TDA	Teacher Degree Apprenticeship, England
TEDS-M	Teacher Education and Development Study in Mathematics
TTU	Tanzania Teachers Union
UNATU	Uganda National Teachers Union
UNESCO	United Nations Educational, Scientific and Cultural Organization
WASSCE	West African Senior School Certificate Examination



Preparing Primary School Teachers: At a Glance

Primary school teachers shape the future by equipping learners with foundational skills essential for academic achievement, work, and life.

What competencies do new teachers need?

From the first day of their teaching careers, every teacher should possess the **core knowledge and skills for teaching**, along with a **strong professional identity**. These qualities enhance the effectiveness of education, leading to improved foundational learning outcomes.

Primary school teachers need to be equipped with:

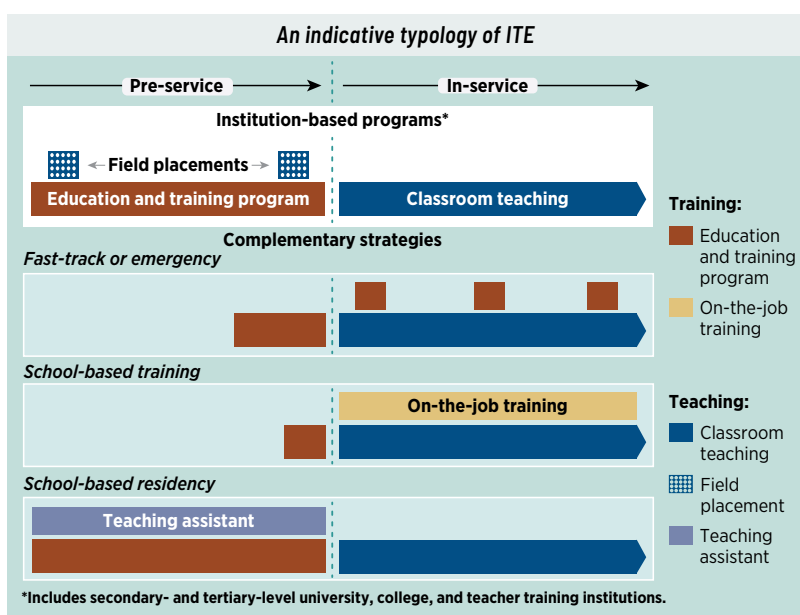
- Subject matter knowledge, particularly language and mathematics, with mastery above the level they will teach
- Subject-specific and general pedagogical knowledge and skills, including
 - An understanding of child learning and development
 - Practical skills in planning lessons, teaching, assessing, creating positive learning environments, and addressing diverse student needs
- An understanding of ethical considerations, responsibilities, and professional norms.

How are new teachers best prepared?

Initial teacher education (ITE) serves as the foundation for teachers’ lifelong professional learning, providing the core knowledge and skills for teaching, along with a strong professional identity.

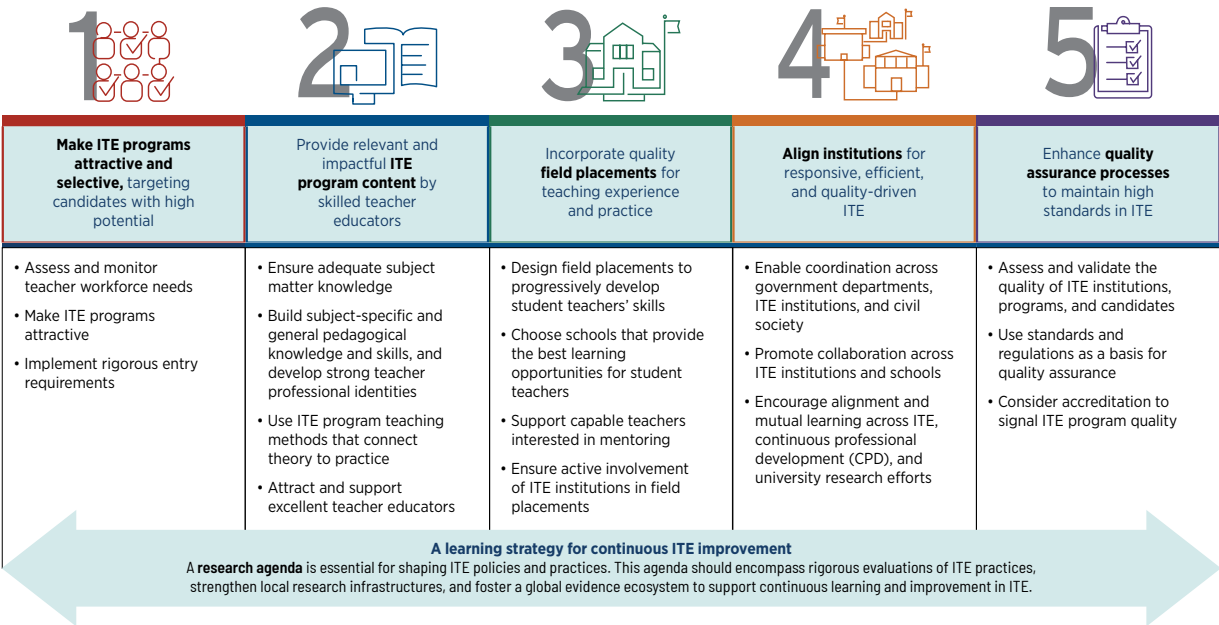
Globally, institution-based ITE programs (at teacher training colleges or universities) are the most common path to becoming a teacher. Strengthening the quality of these institution-based programs through sustained investments is essential for all countries to maintain a pipeline of well-prepared teachers.

Complementary strategies are sometimes used to address specific challenges.



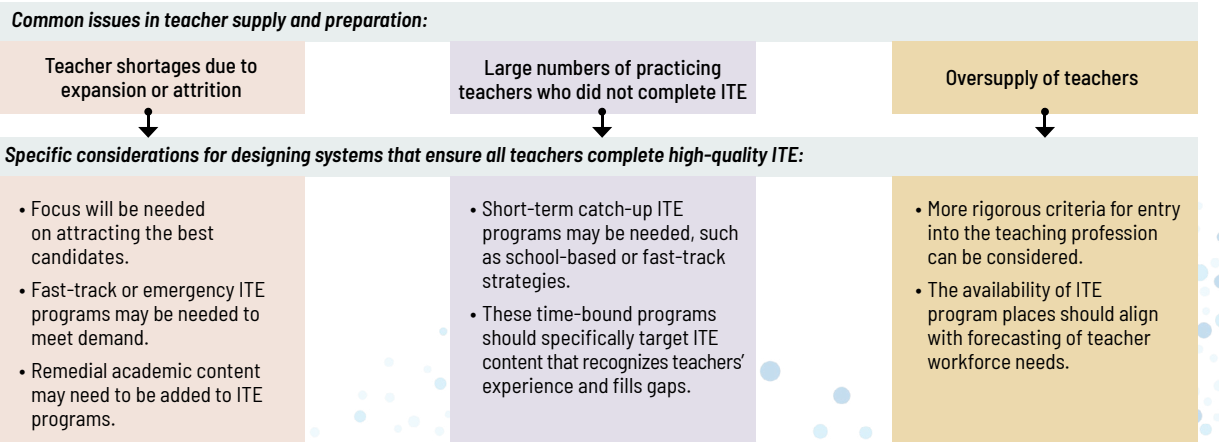
Source: Original figure for this publication.
Note: ITE = initial teacher education.

Five key principles for building an effective ITE system



How can ITE systems better respond to education system contexts?

When facing specific challenges in the supply and preparation of teachers, policy makers may need to implement complementary short-term strategies while continuing to strengthen institution-based ITE programs.



Part 1

Overview of Initial Teacher Education

How can teachers enter the classroom on day one with the knowledge, skills, and dispositions they need to help students succeed? Initial teacher education (ITE)—the education and training that teachers receive before beginning their teaching careers—is a major part of nearly every country’s education system, and it shapes the teachers that students encounter. This report examines how to strengthen ITE to achieve the best possible results. Part 1 explains why ITE matters, introduces a framework of five organizing principles, and describes current ITE structures worldwide. Part 2 examines each principle, posing key questions that policy makers should ask when improving ITE, synthesizing evidence on how to implement ITE effectively, drawing on both causal evidence and practical examples from around the globe, and identifying areas where further learning is still needed.

This report is accompanied by 11 illustrative country case studies of ITE in Bahrain, Burkina Faso, Chile, the Dominican Republic, Finland,

Ghana, India, Kenya, Morocco, Viet Nam, and Zambia (<https://www.worldbank.org/en/topic/teachers/publication/prepared-teachers-global-study-of-initial-teacher-education>). Referenced throughout, these case studies illustrate aspects of each of the five organizing principles, and the table in “Spotlight: Country Experience Case Studies” helps readers locate experiences and examples aligned with their immediate challenges (for example, making ITE programs more selective or designing more effective ITE field placements).

1

Why ITE Matters for Education

Introduction

Why initial teacher education (ITE) matters is both simple and consequential: when teachers start strong, students learn more. This chapter explains why teacher preparation matters—showing how teachers drive learning outcomes, how ITE equips them with core knowledge and skills, and why neglecting ITE imposes systemwide costs. It also explores how ITE shapes mindsets and professional identity and how effective ITE systems can elevate the prestige of the teaching career.

Teachers Drive Learning Outcomes

Research underscores the significant impact that well-prepared and trained teachers have on student achievement. For example, studies indicate that the “teacher effect” can lead to substantial improvements in student performance, with students taught by high-performing teachers who improve student learning dramatically—from more than 0.2 standard deviations in Ecuador to more than 0.9 standard deviations in India, the equivalent of multiple years of business-as-usual schooling (Béteille and Evans 2021). This highlights the critical role that teachers play in shaping the future workforce and, by extension, the economic prospects of a country.

Moreover, the evidence suggests that teacher education, training, and professional development are essential for enhancing the quality of education. Effective teacher professional development programs that are subject-focused, practice-focused, face-to-face, and with follow-up support can boost student learning (Popova et al. 2022). These improvements in teaching quality can lead to better learning outcomes, which are crucial for building human capital and driving long-term economic growth.

ITE Prepares Teachers for the Job

ITE is the first stage in teachers' career development, where they acquire the core knowledge and skills for teaching, develop their professional identity, and establish the foundation for their career-long learning and professional growth. Ideally, ITE prepares teachers to navigate an increasingly complex environment, adapt to evolving technologies, and address the needs of a diverse student population.

Many countries have successfully established and improved their ITE systems, adding to the growing evidence that high-quality ITE enhances overall educational quality and specifically improves teacher effectiveness. For example:

- Viet Nam has gradually built an ITE ecosystem that produces a strong pipeline of qualified teachers. These well-prepared teachers have played a key role in Viet Nam's impressive performance on international student achievement assessments. Over time, the level, duration, and content of ITE has shifted toward a goal of professionalizing the teaching career (Case Study 3).
- Finland has continuously upgraded its ITE system, contributing to its reputation as a leader in education globally. Over the years, the status and quality of major ITE providers and programs have been enhanced through greater selectivity, a stronger focus on research, and elevated professional standing for teacher educators (Case Study 6).
- Estonia's ITE system has been a key driver of the country's educational achievements, with features such as a research-oriented approach driven by clear and rigorous teacher standards, greater integration between ITE and teachers' continuous professional development (CPD), and a strong quality assurance system (Eisenschmidt et al. 2023).

Neglecting ITE Has Systemwide Costs

Without high-quality ITE, teachers must acquire core knowledge and skills for teaching while in service. Efforts to deliver this core set of knowledge and skills through "general-skills" in-service training have not shown a positive impact on student learning outcomes (GEEAP 2023). More targeted "specific-skills" in-service training programs—designed to help teachers implement particular pedagogical practices—have shown more promising results for student outcomes (Popova et al. 2022).

However, these specific-skills trainings are intended to address immediate teaching gaps or new developments and cover only a small portion of

what teachers need to effectively adapt instruction to the evolving needs of their classes (Nourani, Ashraf, and Banerjee 2025). As a result, teachers often require ongoing remediation or compensatory support. For a ministry of education, this means that CPD—which should be focused on updating and expanding teachers’ knowledge—is instead used to compensate for gaps in core knowledge and skills that should have been addressed during ITE.

ITE Builds the Core Knowledge and Skills for Teaching

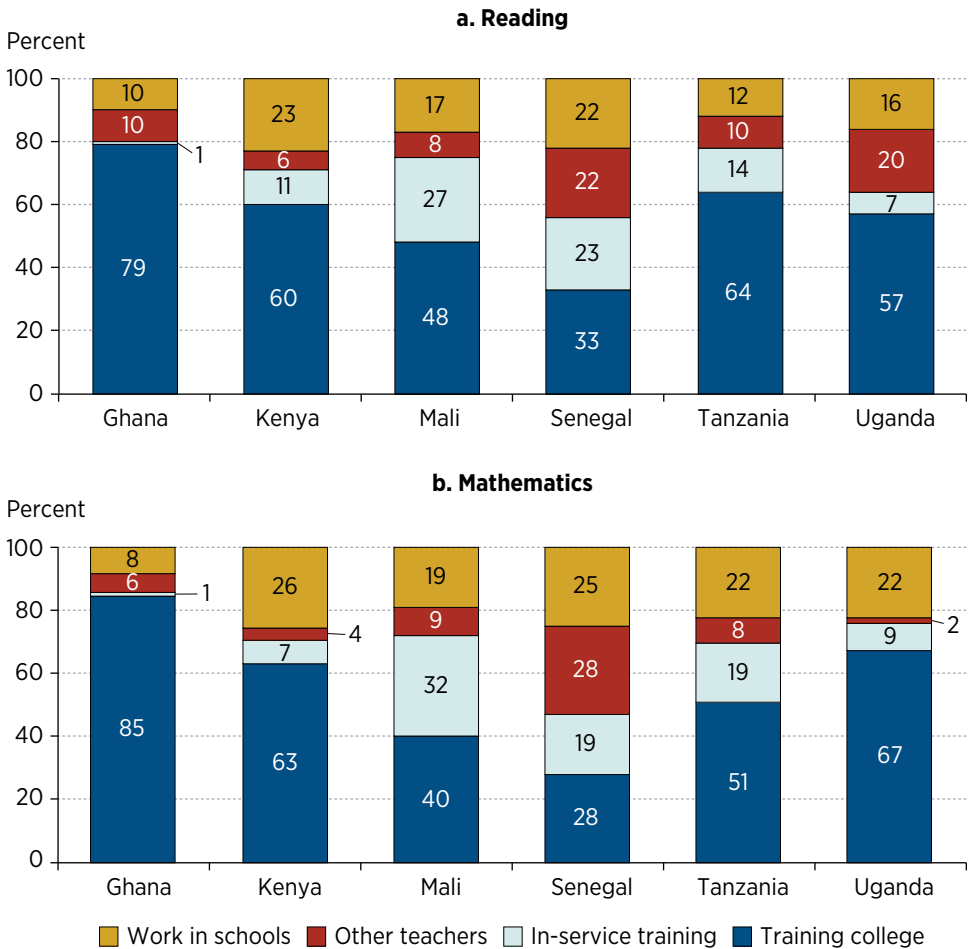
Teachers are most effective when they understand how children learn and develop, apply the science of learning in practice, master their subject matter, assess students’ learning needs, and adapt instruction to meet diverse classroom needs. They must be able to plan and deliver engaging learning experiences based on the curriculum and specific learning objectives while quickly adapting their teaching practices to a rapidly changing world. Acquiring and refining these abilities is a long-term process that requires specialized instruction and support both before teachers enter the classroom and throughout their careers (Béteille and Evans 2021; Bruns and Luque 2015).

High-quality ITE produces more effective teachers by providing them with a strong, in-depth understanding of child development, learning processes, and teaching methods (World Bank 2019). This core knowledge serves as the scaffolding necessary for a successful teaching career. When ITE integrates subject matter knowledge, pedagogical expertise, and field placement experience, teachers are better prepared to begin their professional journey. Research on teacher preparation in six African countries found that newly qualified teachers identified their ITE (in training college) as the most influential factor shaping their practice (Akyeampong et al. 2013) (figure 1.1).

Teaching experience built upon high-quality ITE leads to more confident and engaged teachers (Westbrook et al. 2013). In contrast, recruiting teachers with little or no prior training can result in stressful and unsupported situations for new teachers, leading to higher attrition rates and lower instructional quality.

Teachers who have received effective ITE are also more likely to benefit from CPD. Rather than serving as a compensatory measure to address gaps in ITE, CPD can instead focus on contextualizing professional development to the realities of individual schools and supporting teachers as they encounter new challenges.

Figure 1.1 Percentage of New Teachers by Place of Learning Where They Developed Their Best Understanding of Teaching Reading and Mathematics, Selected African Countries



Source: Akyeampong et al. 2013.

Note: Initial teacher education (ITE) programs are referred to as “training college” in this figure. They are less prevalent in Mali and Senegal than in other countries.

ITE Shapes and Challenges Mindsets and Expectations

Many education systems face a cycle of weak classroom practice: Learners are taught by underprepared teachers or by teachers who rely on a narrow set of evidence-based teaching strategies. When these learners become student teachers, they bring limited exposure to high-quality instruction and an incomplete model of what effective teaching looks like.

Despite this, as Lewin notes in research from five low- and middle-income countries, “trainees often do have well-developed images of good primary teachers which typically focus on the personal and affective aspects of the role, rather than methods of effective teaching and learning of content” (Lewin 2004, 6). This suggests that while aspiring teachers value the interpersonal qualities of good teaching, their conception of effective instruction is often narrow. Teacher education can broaden this view by explicitly developing knowledge and skills in evidence-based instructional strategies. For primary school teachers, this is particularly important for teaching foundational skills such as literacy, numeracy, and socioemotional skills.

By equipping prospective teachers with the core knowledge and skills for effective teaching along with a strong professional identity, and exposing them to high-quality teaching practices, ITE can help break this cycle. ITE can challenge student teachers’ perception of and beliefs about teaching, offering an opportunity to reframe their expectations of their future roles. Without this shift in mindset, it is difficult to motivate meaningful changes in practice.

Well-prepared mentor teachers during field placements (as part of ITE programs), as well as teacher educators, can serve as role models for student teachers (Darling-Hammond 2014). These individuals can introduce student teachers to new knowledge and provide concrete examples of effective practice.

ITE Forges Professional Identity

Teacher identity refers to the sense of self that teachers develop in relation to their role as teachers (Beijaard, Meijer, and Verloop 2004). It captures their beliefs, values, attitudes, and perceptions about teaching as well as how they see themselves within the broader context of the education system. Teacher identity is dynamic and shaped by personal experiences, professional training, interactions with students and colleagues, and the social and cultural context in which teachers work (Varghese et al. 2005). It is also influenced by professional ethics shared within the teaching workforce. Teachers with a positive and well-developed professional identity are more likely to be committed to their profession, which leads to higher levels of motivation, job satisfaction, and perseverance, even in the face of challenges. A strong teacher professional identity is positively associated with teachers’ participation in ongoing professional learning, their teaching practices, and their commitment to the profession, including the decision to remain in it (Suarez and McGrath 2022).

Although teacher professional identity evolves over the course of a career, ITE can lay a solid and positive foundation (Beauchamp and Thomas 2009). This foundation can be established in several ways: First, acquiring a comprehensive understanding of the science of learning, child development, subject matter content, and relevant interpersonal skills provides an intellectual framework that helps define what it means to be a teacher. Second, when ITE institutions foster a collaborative environment, students tend to develop a shared initial perspective of teacher identity. Third, programs that include discussions on professional values and ethics help future teachers align their personal values with their professional roles.

Teacher professional identity is shaped through both ITE course content and field placements, with practical experience and mentorship being particularly influential. According to the Teaching and Learning International Survey (TALIS) 2018, 56 percent of school principals emphasized the importance of mentoring during field placements in shaping positive teacher identities (Suarez and McGrath 2022). ITE programs that blend theoretical knowledge with practical experience help student teachers connect academic concepts with real-world classroom dynamics.

Bahrain Teachers College, affiliated with the University of Bahrain, provides an example of how ITE programs can foster professional identity. The college has developed strong institutional norms around student teachers' responsibilities and ethics, recognizing the importance of professional identity as a core part of the ITE experience (Case Study 1). In addition, Finland's approach to ITE demonstrates how teacher education can help establish a strong sense of professional identity. The Finnish system has historically valued teachers' professional autonomy, beginning with high expectations for teacher expertise developed in part through ITE. More recently, Finland's new vision for teacher education, Teacher Education 2050, centers on teacher professional agency and professionalism (Case Study 6).

Viet Nam's teachers also exhibit a particularly strong sense of professional identity, in part because of rigorous ITE. This is significant because ITE has been a key investment in Viet Nam (Case Study 3). Prospective teachers in Viet Nam already identify strongly with the profession and demonstrate high levels of dedication. Teaching was the first-choice career for 93 percent of teachers in Viet Nam, compared with 67 percent on average across the Organisation for Economic Co-operation and Development (OECD) countries and economies participating in TALIS (OECD 2019). Regarding their motivation for joining the profession, at least 99 percent of Viet Nam's teachers cited the opportunity to influence children's development or contribute to society as a major factor.

A higher proportion of Viet Nam's teachers also were satisfied with their jobs in 2018 than in most other TALIS countries (96 percent, ranking third out of 50 participating countries). Additionally, a larger proportion of Viet Nam's teachers believe that the teaching profession is valued in society (92 percent, ranked first out of 50 countries). In primary education, the share of teachers reporting a collaborative culture characterized by mutual support is higher in Viet Nam than in other OECD and partner countries with available data (98 percent, ranked first of 14 countries).

ITE Can Enhance Career Prestige and Commitment

High-quality ITE can lay the foundation for a clear and prestigious career path in teaching. A formal and rigorous selection process for entry into ITE programs enables student teachers to view themselves as members of a respected, high-status profession. Certification obtained through or following ITE further reinforces the perception of teaching as a legitimate and esteemed profession.

The establishment of structured career tracks for teachers is a key driver of effective teaching (Rauschenberger, Adams, and Kennedy 2017). By recognizing seniority, performance, training, and other markers, career tracks institutionalize incentives for teachers to improve their performance and expand their knowledge and skills. As a result, teachers are more likely to make a long-term commitment to the profession, less likely to leave the field, and more inclined to invest in their own professional development. With ITE as the first step in a teacher's career track, these benefits begin to accrue from the outset.

In Shanghai, China, the establishment of a clear and motivating career ladder has played a significant role in developing the teaching profession (Zhang, Ding, and Xu 2016). The career ladder, which consists of 13 steps, rewards investments in training, experience, and performance. To reach the first level, student teachers must graduate from an ITE program and complete a one-year induction program. They must then pass an examination at the end of the induction period to be certified as a teacher.

Strengthening the status of ITE itself has also been central to strategies aimed at enhancing the prestige of teaching. In Viet Nam, Ghana, and Morocco, ITE reforms included raising the required education level for teachers (for example, from secondary to tertiary education) (Case Studies 3, 4, and 8, respectively). In the Dominican Republic, ITE was expanded from a part-time to a full-time program. This change, along with efforts to

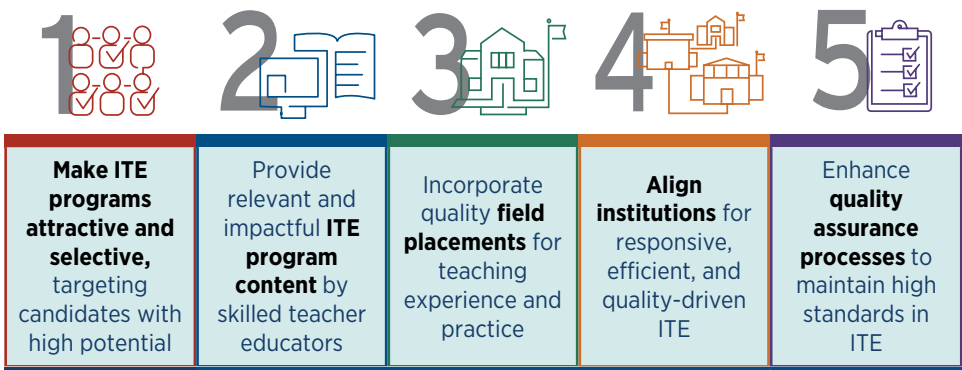
make both ITE and the teaching career more attractive and selective—including through scholarships, more rigorous entry requirements, and higher teacher salaries—helped signal that teaching is a professional career requiring substantial preparation (Case Study 10).

A Framework for Building an Effective ITE System

When designed and implemented well, ITE can help education systems achieve greater coherence and alignment around learning. Throughout this report, evidence and examples are organized around five key principles (figure 1.2). To build effective ITE systems, education systems can do the following:

- Make ITE programs both attractive and selective, targeting high-potential candidates;
- Provide relevant and impactful ITE content by skilled teacher educators;
- Incorporate quality field placements for student teachers to gain teaching experience and practice;
- Align institutions (such as government departments, ITE institutions, schools, and civil society) for responsive, efficient, and quality-driven ITE; and
- Enhance quality assurance processes to maintain high standards.

Figure 1.2 Summary of Five Key Principles for Building Effective ITE Systems



Source: World Bank.

Note: ITE = initial teacher education.

Key Takeaways

This chapter has discussed the impact that well-prepared and trained teachers have on education quality and student achievement and hence the importance of investment in ITE programs. Key takeaways include the following:

- *ITE represents the first stage in teachers' career development.* It provides the essential basis for teachers to grow as lifelong learners and is a critical step for acquiring the core knowledge and skills for effective teaching—including the ability to support students' foundational learning in literacy, numeracy, and socioemotional development—along with a strong professional identity.
- *The opportunity cost of not investing in ITE is high.* Failing to invest in ITE leads to a reliance on in-service training, which often becomes remedial, short-term, and unsustainable. Early investment in ITE can be more effective and efficient than trying to compensate for gaps later in teachers' careers.
- *ITE shapes teachers' perceptions of the profession, encouraging evidence-based, reflective practices that may differ from their own schooling experiences.* It can introduce evidence-based approaches that can help counter an overreliance on less effective methods such as rote learning.
- *Through ITE, prospective teachers can begin to see themselves as dedicated professionals, gaining a clear understanding of the expectations, norms, and values of the teaching profession.*
- *Well-supported ITE systems make the teaching profession more attractive, helping to recruit stronger candidates and reinforcing the perception of teaching as a respected and highly skilled career.*

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2

What ITE Looks Like Around the World

Introduction

The requirements to become a primary school teacher and the approaches to initial teacher education (ITE) vary across the world. Institution-based programs (in universities or colleges) are the most common, but complementary strategies—such as fast-track and school-based programs—are also found in most countries. The rapid expansion of education systems and the need to address teacher shortages have led to a diversity of approaches in ITE. This chapter examines the pathways to becoming a primary school teacher, reviews the different ITE approaches (and the available evidence behind them) and considers the challenges and opportunities in preparing effective teachers worldwide.

Qualification Requirements for Primary School Teachers

The qualifications required to work as a primary school teacher vary widely both across and within countries. Typically, these requirements include a minimum academic qualification, completion of an ITE program, and other licensing or regulatory criteria. A recently compiled dataset from the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute of Statistics provides information on teacher qualification policies in approximately 200 countries (UIS 2023). This dataset aims to improve the international comparability of data on trained and qualified teachers, addressing variations in national definitions (box 2.1). In some countries, both qualified and unqualified teachers work within the same education system.

Box 2.1**International Definitions of Trained and Qualified Teachers**

Trained and qualified teachers are essential to high-quality education systems. However, defining and monitoring the proportions of teachers who are trained and qualified can be challenging. As currently defined by the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS 2023),

- Sustainable Development Goal (SDG) indicator 4.c.1 measures the proportion of *trained* teachers—those who have received at least the minimum organized pre-service or in-service training (such as pedagogical training) required for teaching at a specified level; and
- SDG indicator 4.c.3 measures the proportion of *qualified* teachers according to national standards, where “qualified” refers to the level of the minimum academic requirement.

International data on these indicators therefore do not distinguish between pre-service and in-service training and are based on national definitions. This ultimately limits cross-country comparability.

To address this, two complementary initiatives aim to improve the international comparability of these indicators. The new International Standard Classification of Teacher Training Programmes (ISCED-T 2021) was developed for future data collections and includes the following five dimensions (UIS 2022):

- Education level obtained upon completion of the teacher training program
- Target teaching level of the program
- Minimum education level required for entry into the program
- Duration of the program, measured in years
- Proportion of the program that is work-based and occurs in schools.

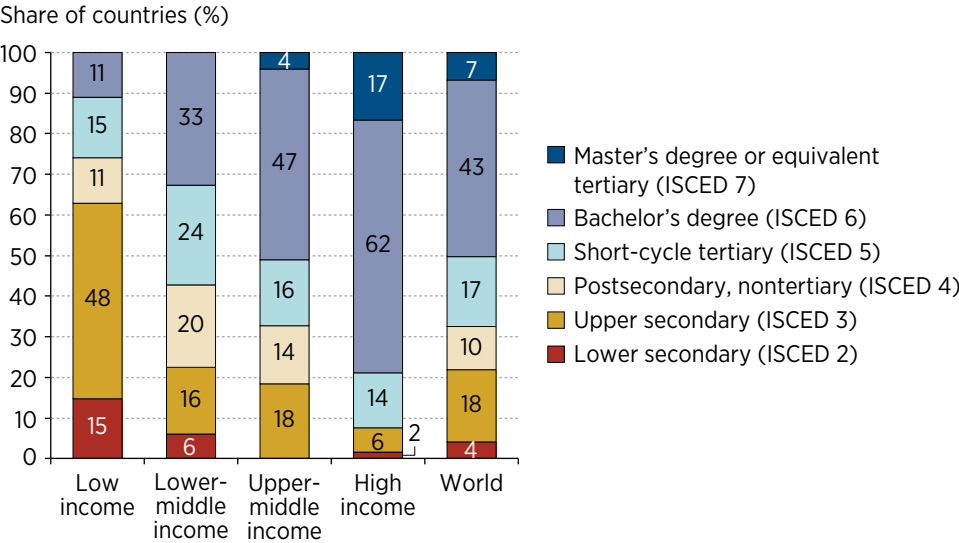
Additionally, a new dataset was designed to document teacher requirement policies around the world, based on the regular country survey of the UNESCO Institute for Statistics (with online sources to fill gaps). Together, these two approaches will help make it more feasible to develop reliable and comparable global minimum standards for teacher training and qualifications.

Source: Based on information from UIS 2023.

Regarding the level of education, globally, a bachelor’s degree or higher is required to become a primary school teacher in about half of all countries (figure 2.1). In 22 percent of countries, a secondary school qualification is the minimum requirement. Middle- and high-income countries tend to require higher levels of education for primary school teachers; for example, 79 percent of high-income countries require at least a bachelor’s degree. Among low-income countries, the most common minimum requirement is completion of upper secondary education (48 percent), with a further 15 percent requiring only lower secondary education completion.

In terms of education or pedagogical studies, three in four countries require new teachers to have completed ITE as part of their qualification (UIS 2023).¹ The proportion exceeds 75 percent in all regions except for three—Eastern and South-Eastern Asia, Oceania, and Central and South Asia—where it is below 50 percent.

Figure 2.1 Minimum ISCED Levels Required for Primary School Teaching, Worldwide and by Country Income Classification



Source: UIS 2023.

Note: ISCED = International Standard Classification of Education Training Programmes.

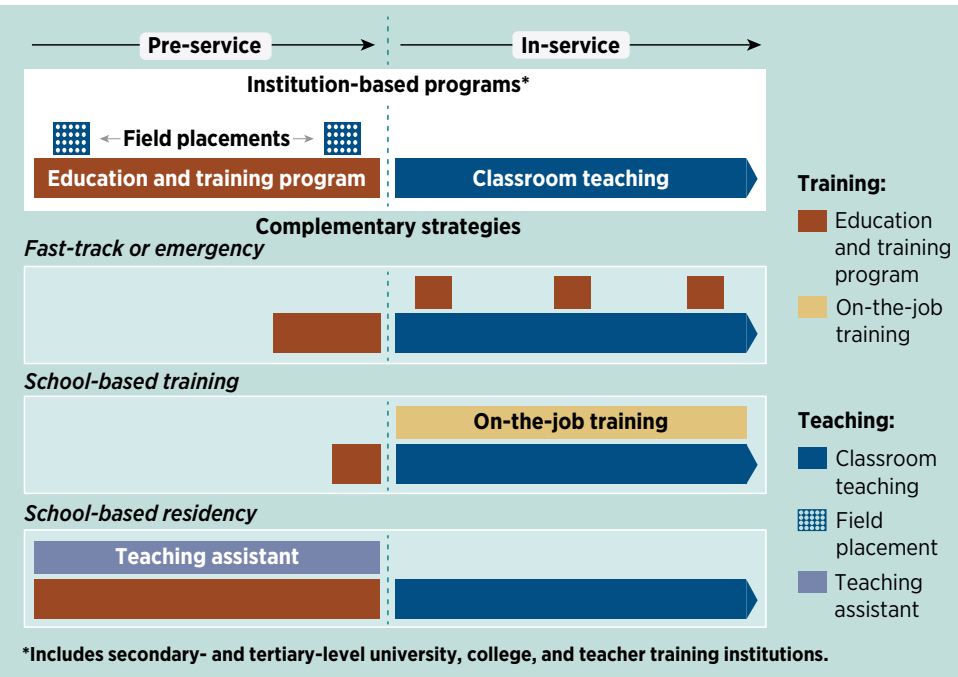
Approaches to ITE Across the World

An indicative typology of ITE is shown in figure 2.2. The categories in this typology are not mutually exclusive; ITE programs can vary widely within each type, and some programs may fall between or outside of these categories.

Globally, ITE is most often institution-based, consisting of programs offered by teacher training colleges or university faculties of education. Teacher training colleges typically focus on practical teacher preparation through shorter, practice-oriented programs, primarily offering diplomas and certificates. In contrast, university faculties of education generally provide degrees and postgraduate programs that also include theoretical, research, and specialized components. Institution-based ITE combines academic studies with supervised field placements for practical experience and usually takes one of two forms:

- *Concurrent studies*, in which the student teacher undertakes a single program that integrates academic subject content to be taught, pedagogy, and other education concepts, along with field placements for practical experience.

Figure 2.2 An Indicative Typology of ITE



Source: Original figure for this publication.

Note: ITE = initial teacher education.

- *Consecutive studies*, in which the student teacher first completes a degree or diploma in the academic subject content, then undertakes professional studies (pedagogy and education), along with field placements for practical experience.

There is a global trend within institution-based ITE to elevate the education level of these programs. This trend results in more time spent in higher education before teachers are deployed to schools. In several countries, such as Finland, teachers are now expected to have a master's degree. As part of ITE reforms in Kenya and Viet Nam, the level of ITE for the preparation of primary school teachers was raised to the bachelor's degree level (Case Studies 11 and 3, respectively). There are two common justifications for this shift: First, the increased training time reflects the belief that primary school teaching has become more complex because of higher expectations and increased diversity of learning needs among students, necessitating a higher level of qualification. Second, this move aims to enhance the status of teachers and make the teaching profession more attractive.

Complementary ITE strategies are found in countries across the world. These strategies may or may not involve teacher education or training provided by institutions such as teacher training colleges or universities. They can be broadly grouped into

- *Fast-track or emergency strategies*, where minimal training is provided before and during new teachers' service;
- *School-based training strategies*, including apprenticeship or "grow your own" programs, where training is provided while teachers are in service; and
- *School-based residency strategies* that provide on-the-job training during service.

Complementary ITE strategies are usually aimed at addressing teacher shortages, attracting candidates with diverse backgrounds and expertise, or reducing costs. They are also found in countries across all income levels, but pathways into teaching that do not require any form of ITE are found only in low-income country contexts. As with institution-based ITE, complementary strategies vary greatly depending on local contexts and needs (Grossman and Loeb 2008; Lewin and Stuart 2003; Matsko, Ronfeldt, and Nolan 2022). More than one-third of high-income countries offer an alternative pathway into primary school teaching. In all of these cases, some form of education and training is required in addition to on-the-job learning. However, in 2 out of 10 low-income countries, alternative pathways exist that do not require any training before or after entering the classroom (UIS 2023).

Across all models, ITE can be managed by either public or private providers with financing coming from public or private funds. Public provision of ITE is typically funded by government resources, aiming at equitable access and standardized quality across regions through established infrastructure and regulatory frameworks that enhance accountability and consistency. Private provision of ITE may be financed through private investments and tuition fees and can introduce competitive elements that are responsive to market demands, such as flexible learning options. Mixed approaches can leverage the strengths of both public and private provision and financing, including through effective regulation and oversight.

The context—including the capacity of institutions, the regulatory environment, and socioeconomic factors—is important to consider in decisions about effective and efficient ITE provision. Regardless of the type of provider, ensuring quality and implementing quality assurance measures are crucial (chapter 7). In recent decades, regions such as Latin America and South Asia have experienced a proliferation of low-quality private providers (Béteille and Evans 2021; Bruns and Luque 2015). When these institutions are poorly regulated, they can produce ill-prepared candidates, sometimes in excess (see Case Studies 5 and 7 on Chile and India, respectively).

The Evidence on Institution-Based ITE and Complementary Strategies

The evidence on how the quality of institution-based ITE programs relates to teaching quality and student learning (predominantly though not exclusively from high-performing education systems) is mixed. Some studies find that teachers trained in more highly rated programs deliver greater student learning gains (Ronfeldt and Campbell 2016), while others find little difference across programs (Koedel et al. 2015; Von Hippel and Bellows 2018). Yet both cross-country and within-country comparisons indicate a positive relationship between the average level of teachers' training and student achievement (for example, Akiba, LeTendre, and Scribner 2007; Govinda et al. 1993). Experiences from Bahrain (Case Study 1) and Viet Nam (Case Study 3) are consistent with the view that carefully crafted improvements to institution-based ITE can strengthen teaching and raise student achievement.

However, there is also evidence that the quality of institution-based ITE programs needs improvement. Studies of recent ITE graduates around the world have identified limitations in their preparation such as weak subject-matter knowledge, poor classroom management, and inadequate use of formative assessment (for example, Bonnet 2008; Bruns and Luque 2015; Lewin and Stuart 2003; McKenzie et al. 2014; Tatto 2018; World Bank 2020).

Furthermore, research showing that teachers rapidly improve during their first few years in the classroom (for example, Ladd and Sorensen 2017; Papay and Kraft 2015) may suggest that there are learnable skills that could be addressed during ITE to better prepare new teachers for their first appointments or accelerate improvement.

As many countries move toward more rigorous educational requirements for entering the teaching profession—based on the premise that children and young people benefit from teachers with strong educational backgrounds and specialized training—there has been a focus on raising the level of academic qualifications, with many countries increasing requirements to bachelor’s or master’s degrees. However, improving the content, quality, and relevance of ITE programs at their existing level can be an impactful step, as illustrated by Viet Nam (Case Study 3). Moves toward higher qualification requirements should be phased in over a designated period to manage the process carefully and avoid unintended consequences, such as teacher shortages or the replacement of experienced teachers with inexperienced ones, either of which could result in students learning less (Bueno, Darling-Hammond, and Gonzales 2010; Busso et al. 2024).

Likewise, the evidence on complementary ITE strategies is mixed or limited. The wide variation and context-specific nature of fast-track and school-based teacher preparation programs make it difficult to draw generalizable insights from the research. For example, when comparing fast-track or school-based teacher preparation programs, the counterfactuals (or business-as-usual scenarios) can differ greatly from one context to another. Evaluations comparing the effectiveness of complementary ITE strategies to institution-based ITE programs have shown mixed results. In some cases, results have been positive due to the recruitment of higher-quality candidates and the provision of appropriate training and support (e.g., McEwan et al. 2015). In other cases, results have been mixed due to various implementation challenges, such as the complementary ITE strategies allowing less capable candidates to become teachers, or funneling candidates to lower-quality training programs (e.g., Bold et al. 2013; Bourdon et al. 2010; Tatto et al. 1993; Zakharov et al. 2016). The most studied fast-track programs are those associated with the “Teach For” movement (box 2.2).

Fast-track programs share several design features with emergency programs for unqualified or underqualified teachers recruited to teach in crisis situations. For example, the Inter-agency Network for Education in Emergencies (INEE) has developed a “Training for Primary School Teachers in Crisis Contexts” package to support under- or unqualified teachers working in emergency settings or with internally displaced persons or refugees (INEE 2016). However, research evaluating the effectiveness of this or similar emergency programs is not yet available.

Box 2.2**Example of a Fast-Track Model: “Teach For All”**

Teach For America is the most studied complementary initial teacher education (ITE) strategy globally and has inspired similar “Teach For” programs in many countries. The program is highly selective, recruiting university graduates and providing them with intensive training during the summer before the school year begins. After this training, participants are certified and placed in a high-need school, where they commit to teaching for two years.

Three randomized controlled trials, which assigned students to classrooms led by Teach For America teachers or non-Teach For America teachers, found that Teach For America teachers outperformed their counterparts in some subjects and grades, though not all (Clark et al. 2013, 2017; Decker, Mayer, and Glazerman 2004). These results are consistent with large-scale descriptive studies showing that Teach For America teachers have equal or higher teacher or school value-added scores than traditionally trained teachers with similar experience levels (for example, An and Koedel 2021; Backes et al. 2019; Boyd et al. 2006; Henry et al. 2014; Kane, Rockoff, and Staiger 2008). Similar findings have been reported for comparable programs in Chile (Alfonso, Santiago, and Bassi 2010; De Gregorio and Neilson 2021); England (Allen and Allnut 2017; Muijs, Chapman, and Armstrong 2012); Nigeria (Mihaly et al. 2024); and Peru (Lavado and Guzmán 2020).

However, these studies do not clearly identify the factors driving this effectiveness—whether it is recruitment, training, or other elements. Additionally, Teach For programs may have limited impact on addressing teacher shortages sustainably because they are not designed for retention: only 15 percent of Teach For America teachers remain in the profession after five years, raising concerns about potential trade-offs in teacher retention (Backes and Hansen 2023; Lovison 2024).

The school-based training strategy is similar to the fast-track strategy in that it offers a very short training program before teachers begin their posts. However, instead of periodic training provided by external providers, the initial training is delivered at the school as in-service training. An example is the Tutorial Learning System (Sistema de Aprendizaje Tutorial, SAT) initiative in Honduras, where individuals from local communities—often without university or teaching credentials—were recruited and provided with six weeks of annual in-service teacher training.² This approach was found to be effective: Children in villages with SAT had test scores 0.2 standard deviations higher on average than children in other villages (McEwan et al. 2015).

The school-based residency strategy has recently gained significant attention in high-income countries facing teacher shortages (box 2.3). This strategy is characterized by strong partnerships between school systems and universities to ensure a coherent education and training program; extended teacher assistantships under the guidance of expert mentor teachers; financial support in exchange for medium- to long-term teaching commitments; and high-ability, diverse candidates to meet specific local community needs (Guha, Hyler, and Darling-Hammond 2016; Truwit, Ronfeldt, and Bardelli 2024). Evidence on the impact of these programs on teacher retention and student outcomes is limited, though some studies have found positive effects on both (Papay et al. 2012; Sloan and Blazevski 2015).

Given the limited evidence available on fast-track and school-based programs, further research is needed to identify the specific features that enable teachers in these programs to be as well prepared as those from institution-based ITE programs, as well as the factors that contribute to their retention in the profession.

Box 2.3

England's Teacher Degree Apprenticeships: A School-Based Residency Model

To address teacher shortages in certain subjects and areas, England is introducing a new teacher degree apprenticeship (TDA) as an alternative route to becoming a qualified teacher. This four-year, full-time program is delivered in partnership with accredited teacher training providers. Teaching apprentices work in a school and earn a salary while simultaneously working toward a bachelor's degree and qualified teacher status. Approximately 40 percent of the trainees' time (equivalent to two days per week) is dedicated to studying for their degree. The salary varies depending on the type and location of the school. Importantly, trainee teachers do not pay tuition fees.

This program targets teaching assistants, school leavers, and individuals seeking career change. To be eligible, applicants must be at least 16 years old and hold minimum English and mathematics General Certificate of Secondary Education (GCSE) qualifications as well as Advanced Levels (A Levels) as required by individual universities. Given that this is a new development, research evidence on the effectiveness of the TDA is not yet available.

Source: "Teacher Degree Apprenticeships (TDAs)," Get Into Teaching website, UK Department for Education: <https://getintoteaching.education.gov.uk/train-to-be-a-teacher/teacher-degree-apprenticeships>.

The Effect of Teacher Supply and Demand on ITE Decisions

To achieve universal primary education from low levels of enrollment, some countries have allowed individuals without any ITE or formal qualifications to become teachers. This approach raises concerns for several reasons. In these contexts, there is often limited access to high-quality teaching practices for new teachers to observe and learn from. Additionally, these new teachers may themselves lack high levels of education, and the absence of formal training means they do not acquire the core knowledge and skills for teaching, and strong professional identity, that are usually gained through ITE. As a result, the effectiveness of any in-service training provided may be limited because these teachers have little foundational knowledge to help them understand new concepts and ideas.

Under these circumstances, untrained and unqualified teachers are hired outside the usual civil service recruitment process, typically through contracts or by the community (box 2.4). These efforts tend to prioritize addressing immediate teacher shortages over making longer-term investments in building a strong teaching force. However, to develop a robust pipeline of effective teachers, it is important to improve ITE alongside implementing strategies to address teacher shortages. Involving ITE institutions in the training of untrained teachers could help achieve both objectives.

Box 2.4

Understanding Contract Teachers: Their Training and Experiences

In 2015, the international community pledged to significantly increase the number of qualified teachers by 2030 to ensure inclusive, equitable, and quality education as well as to promote lifelong learning (Sustainable Development Goal 4). However, it is now estimated that 44 million more teachers will be needed globally—including 15 million in Sub-Saharan Africa and 7 million in South Asia—to achieve universal primary and secondary education by 2030 (UNESCO and TTF 2024). Many low- and middle-income countries have increasingly relied on contract teachers to fill these gaps, raising important questions about their roles, training, and experiences.

(continued)

Box 2.4**Understanding Contract Teachers: Their Training and Experiences (*continued*)****Who Are Contract Teachers?**

Broadly, contract teachers are recruited through alternative pathways and work outside traditional civil service employment arrangements. There is no single definition: In francophone Sub-Saharan Africa, for example, terms such as part-time teacher, state contract teacher, national service contract teacher, and volunteer or community teacher all refer to different types of contract teachers. Intended as a temporary measure to address teacher gaps, the use of contract teachers has, in practice, become entrenched across many systems.

Although contract teachers may have similar academic qualifications to their civil service counterparts, they usually have less exposure to initial teacher education (ITE) and often lack degrees in pedagogy or education. They also generally have fewer opportunities for professional development, which may be reserved for regular, full-time government teachers.

Contract teachers commonly face disadvantages such as lower pay and job insecurity because their employment depends on public budget fluctuations, private market pressures, and the ability of education providers to pay. They are often paid from private school budgets, through fees collected from local parents, or via other public-private arrangements. As such, they typically do not receive benefits such as annual leave, pension, or health insurance, which are standard in the public sector. They also commonly work on precarious, short-term contracts.

Preparation and Professional Development of Contract Teachers

There is wide variance in the preparation, if any, of contract teachers. In Chad, which has a very high student-trained teacher ratio, three levels of training are recognized:

- *Level 0 teachers* are recruited by communities without pedagogical training.
- *Level 1 teachers* complete 45 days of training.
- *Level 2 teachers* receive one year of training in the École Nationale des Instituteurs and obtain the Elementary Certificate of Completion of Normal Studies.

(*continued*)

Box 2.4**Understanding Contract Teachers: Their Training and Experiences (*continued*)**

In Mozambique, candidates who lack pedagogy and educational psychology training can be recruited as contract teachers but must complete this training to transition to the civil service. In Cameroon, only remote community-based teachers can be recruited without a qualification. In India and Nepal, both regular and contract teachers must have the same qualifications, yet in primary education, 8 percent and 4 percent of teachers, respectively, do not meet minimum qualifications.^a

In Cameroon, continuous professional development is mandatory for all teachers, including contract teachers. Similarly, in Mozambique, contract teachers have the same rights as regular teachers to participate in short training programs. In Nepal, a 30-day professional development opportunity was initially provided to regular teachers and later extended to all teachers in public schools.

Working Conditions, Morale, and Teacher Attrition

The working conditions, morale, and retention of regular teachers are closely linked to the need for and experiences of contract teachers. High student-trained teacher ratios in Cameroon (60), Chad (90), and Mozambique (68) affect teacher effectiveness, motivation, and well-being, especially in rural and remote areas where ratios exceed national averages. In India, 16 percent of teachers in government primary schools are contractual, with 90 percent of these positions located in rural regions, many in single-teacher schools.

These conditions create a cycle where trained teachers resist deployment to these areas or seek employment elsewhere once deployed. As a result, ITE programs must prepare even more teachers, reducing the overall efficiency of the education system, or contract teachers are required to fill the gaps. This has led to a situation in which three in four primary school teachers are on temporary contracts in Cameroon, Chad, and Mozambique.

Although contract teachers help address teacher shortages, they work in the same challenging conditions but with added pressures related to salary and job security, leading to a cycle of teacher attrition and low educational outcomes for learners.

In contrast, the proportion of contract teachers at the primary education level in Senegal has declined (now only one in four) because of efforts to absorb contract teachers into the civil service. Similarly, legislation in

(continued)

Box 2.4**Understanding Contract Teachers: Their Training and Experiences (*continued*)**

Burkina Faso in 2015 resulted in the transition of all state contract workers to the civil service—a remarkable shift. Targeted policy interventions can therefore reduce the precarity of contract workers and increase the number of regular teachers working in the system.

In sum, issues related to contract teachers require careful consideration, better support systems, and sustainable employment contracts to enhance their experiences and improve educational outcomes for students.

Source: UNESCO and TTF 2024.

a. India and Nepal teacher data from “Proportion of Teachers with the Minimum Required Qualifications in Primary Education, Both Sexes (%)” obtained using the UIS Data Browser of the United Nations Educational, Scientific and Cultural Organization Institute for Statistics, <https://databrowser.uis.unesco.org/>.

Teacher shortages, whether due to attrition or system expansion, have led to increased interest in complementary ITE strategies like the ones described earlier. This trend has been observed globally, both before and especially since the COVID-19 pandemic. However, caution is needed in designing and implementing such programs, given the limited evidence on their efficacy—particularly in low- and middle-income settings—and the potential negative implications for the professionalization of teaching.

In contexts where there is sufficient or surplus interest in entering the teaching profession, ITE reform decisions often focus on raising selection criteria and qualification levels. For example, some countries have introduced four-year or master’s-level requirements for teachers. However, questions arise regarding the pace of these changes and whether education systems have the capacity to support effective increases in qualification levels. A phased approach with clear interim goals—such as in the case of Viet Nam (Case Study 3)—can help move a system toward higher qualifications while taking into account its current capacity.

Providing High-Quality ITE While Addressing Teacher Shortages

Policy makers are often faced with the challenge of balancing the need to address immediate teacher shortages with the goal of establishing

high-quality ITE that prepares teachers for twenty-first-century classrooms. These two objectives should not be seen as contradictory; rather, they should be pursued simultaneously. When it becomes necessary to implement complementary ITE strategies—such as fast-track ITE or in-service training programs that accelerate student teachers' entry into the classroom—three key questions arise, each with important long-term planning considerations.

First, what will become of these teachers in the long term? Although this extends beyond the immediate scope of ITE, it is essential that teachers trained through complementary strategies are integrated into the overall teacher workforce. This may require them to undertake additional education and training within a modified qualification framework. As a result, the ITE system must adapt to address the ongoing training needs of this cohort. Closer collaboration between ITE institutions and providers of continuous professional development becomes crucial in supporting the career development of these teachers (chapter 6).

Second, when education systems rely on complementary ITE strategies to address teacher shortages, when and how will these approaches be phased out or scaled back? Complementary ITE strategies are typically intended as short-term solutions or for use in specific and limited circumstances to help diversify the teaching workforce. However, if these strategies become institutionalized, it may become increasingly difficult to allocate the necessary resources to develop and strengthen robust institution-based ITE systems.

Finally, how can high-quality ITE be developed while simultaneously addressing teacher shortages? Achieving this dual objective requires a comprehensive and strategic approach. Policy makers should focus on both immediate and systemic interventions based on the key principles and policy actions outlined in chapters 3 to 7.

Technology-Enabled ITE

Technology presents significant opportunities to enhance the delivery of ITE. These enhancements can take various forms, including through technology-supported in-person instruction, blended learning modalities that incorporate interactive engagement, video support, and live observation and feedback, as well as fully online and distance-learning options, which have become increasingly common.

Given the practical and hands-on nature of ITE programs, there are concerns about whether fully online approaches can adequately achieve the

objectives of ITE, as highlighted by experiences in countries such as Brazil (box 2.5). Ongoing research and evaluation are essential to ensure that technology-enabled ITE maintains high standards and effectively prepares teachers for the classroom.

Box 2.5

Brazil: The Challenge of Distance-Learning ITE Programs

Brazil has witnessed a dramatic surge in distance learning for higher education, particularly for initial teacher education (ITE) programs. This growth, fueled by a 2017 decree that eased distance-learning regulations, has led to a significant increase in distance-learning enrollments—a 739 percent rise between 2013 and 2023 (Brazil MEC 2013, 2023). As of 2023, nearly half of all higher education students (49 percent) were enrolled in distance-learning programs.

In 2023, distance-learning ITE programs accounted for 63 percent of teacher graduates, meaning that most basic education teachers in Brazil are graduating remotely. This trend is largely driven by private universities, where the number of graduates from remote ITE programs increased by 171 percent between 2013 and 2023. The share of ITE graduates from distance learning programs rose from 34 percent in 2012 to a peak of 65 percent in 2022 (table B2.5.1).

Table B2.5.1

Percentage of Brazilian ITE Graduates from Teaching Courses, by Modality

ITE modality	2012	2022
In-person	66	35
Distance learning (EaD)	34	65

Source: Brazil MEC 2012, 2022.

Note: Includes graduates of bachelor of education and licensure programs. EaD = educação a distância; ITE = initial teacher education.

Concerns have been raised about the quality of distance-learning ITE programs, with civil society organizations citing low student scores on the National Assessment of Higher Education (ENADE) and higher dropout rates (TPE 2023). Additionally, the reliance on distance learning has reduced opportunities for field placement experience and face-to-face interaction, both of which are crucial for the preparation of teachers.

(continued)

Box 2.5**Brazil: The Challenge of Distance-Learning ITE programs
(continued)**

In response to these challenges, the Ministry of Education (MEC) in 2024 introduced new guidelines requiring distance-learning ITE programs to include at least 50 percent in-person classes.^a In June 2024, the MEC issued an ordinance that set deadlines and transitional procedures for the regulation of distance-learning undergraduate courses. Ensuring the effectiveness of distance-learning ITE programs is essential for meeting the needs of the education system and preparing prospective teachers effectively.

a. See CNE/CP Resolution No. 4/2024 of May 29, 2024, which provides for the “National Curriculum Guidelines for the Initial Training at Higher Level of Teaching Professionals in Basic School Education”: <https://www.in.gov.br/en/web/dou/-/resolucao-cne/cp-n-4-de-29-de-maio-de-2024-563084558>.

Key Takeaways

This chapter has examined the pathways to becoming a primary school teacher, the different ITE approaches, and the challenges and opportunities in preparing effective teachers worldwide. Key takeaways include the following:

- *The requirements to become a primary school teacher vary across the world.* Institution-based ITE programs (in universities or colleges) are the most common, while complementary strategies—such as fast-track and school-based approaches—are also present in countries of all income levels. Pathways into teaching that do not require any form of ITE, such as the hiring of untrained contract or community teachers, are found only in certain low-income countries. More than half of low-income countries train teachers at the secondary school level.
- *Evidence indicates that high-quality institution-based ITE programs can improve teaching quality.* These programs are most effective when they reflect the realities of classrooms and provide teachers with the core knowledge and skills for teaching.
- *Complementary strategies and pathways into teaching with no ITE are often introduced in response to teacher shortages or rapid expansion of schooling.* However, more research is needed to identify which preparation features, across these varied pathways, contribute to successful teacher outcomes, retention, and the professional status of teachers.

- *The drive to achieve universal education coverage has sometimes led to a reliance on complementary ITE strategies, resulting in large numbers of unprepared or underprepared teachers, increasing the need for in-service training.* Although meeting surges in demand is important, it should not come at the expense of teacher preparation quality or the development of a strong ITE system.
- *Setting a clear long-term goal for high-quality ITE, combined with a phased approach to achieving that goal, enables education systems to build the necessary capacity for effective and sustainable teacher preparation.*
- *New technologies are increasingly used to enhance in-person ITE provision, enable blended learning modalities, and support fully online or distance learning.* However, it is important to carefully study these approaches to assess their feasibility and impact, especially given concerns about the effectiveness of fully online ITE.

Notes

1. In this dataset, pedagogical studies requirements are defined as the attainment of a teacher diploma granted by a teacher training program. Regional names are UNESCO regions.
2. The SAT is a formal non-classroom education program of a nongovernmental organization, the Foundation for the Application and Teaching of Science (FUNDAEC). Arising since 1974 as part of a global development program to contribute to the progress of rural areas, the SAT has been approved by education authorities in Brazil, Colombia, Ecuador, Guatemala, Honduras, and Nicaragua ("Tutorial Learning System, FUNDAEC website: <https://fundaec.org/en/sistema-de-aprendizaje-tutorial-sat/>).

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Country Experience Case Studies

Eleven initial teacher education (ITE) country case studies were developed as part of the research for this report. These studies illustrate the report's five principles and associated policy actions. For example, Principle 1 is to make initial teacher education (ITE) programs attractive. Among the case studies, eight different countries provide examples of how they reformed ITE to make their programs more attractive.

In table S.1 of this Spotlight, readers can identify the principles, the reforms of interest (left column of table S.1), the corresponding country cases (middle column), and the summarized actions (right column). The full case studies are available at <https://www.worldbank.org/en/topic/teachers/publication/prepared-teachers-global-study-of-initial-teacher-education>.

Table S.1 Cross-Referenced Guide to ITE Case Studies

ITE reform, by principle	Case studies	Key actions
Principle 1. Make ITE programs attractive, targeting candidates with high potential for admission		
Made ITE programs more attractive or prestigious	1. Bahrain	• Offered full scholarships and stipends to all bachelor of education students (conditional on good academic standing) • Guaranteed teaching positions upon graduation
	3. Viet Nam	• Expanded access by establishing additional education colleges and universities • Exempted student teachers from tuition fees to attract higher-performing students • Waived entrance examinations for candidates from mountainous or ethnic minority regions to address shortages • Provided financial incentives and allowances for teachers in disadvantaged areas

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies (*continued*)

ITE reform, by principle	Case studies	Key actions
	4. Ghana	- Upgraded teacher training colleges to degree-awarding colleges of education - Improved infrastructure (classrooms, libraries, and ICT)
	5. Chile	Guaranteed university admission for high-achieving secondary students who complete a targeted preparation program and take the entrance test
	6. Finland	Enhanced the quality and status of ITE and the teaching profession, increasing competitiveness and attracting top candidates
	8. Morocco	- Extended ITE to a five-year pathway (three-year bachelor of education and two-year postgraduate professional training) with early school immersion experience - Provided financial incentives for participation in a school-based service-learning program
	10. Dominican Republic	- Launched scholarships for students enrolled in ITE programs meeting new quality standards - Enhanced the appeal of the teaching profession, including by raising salaries
	11. Kenya	- Raised the primary teaching qualification from a two-year certificate to a three-year diploma aligned to the new competency-based school curriculum - Strengthened ICT infrastructure and innovation in ITE institutions
Made ITE programs more selective	1. Bahrain	- Raised the secondary school GPA threshold for admission to the bachelor of education program and introduced a foundation-year GPA requirement - Added a specialization-specific proficiency test and a rigorous interview process
	3. Viet Nam	Progressively raised the minimum ITE qualification for primary teaching to a bachelor's degree
	5. Chile	- Required ITE candidates to score in the 50th percentile or higher on the university entrance test - Created admission pathways for culturally engaged and academically strong secondary students.

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies (continued)

ITE reform, by principle	Case studies	Key actions
	6. Finland	Implemented multiple selection criteria including a written examination, group interview, and teaching simulations
	8. Morocco	Introduced a situational judgment test for postgraduate ITE admission to assess socioemotional skills
	10. Dominican Republic	Added entry tests in language and mathematics to increase selectivity
	11. Kenya	Temporarily raised the minimum entry grade for the new ITE diploma (later reversed because of candidate shortages)
Principle 2. Provide relevant and impactful ITE program content by skilled teacher educators		
Helped student teachers catch up on subject matter	1. Bahrain	Introduced a mandatory foundation year for remedial support
	10. Dominican Republic	Introduced a 6–12-month remedial “leveling” program to strengthen basic skills
Improved the content of ITE programs	1. Bahrain	- Defined and regularly updated a student-teacher competency framework for the bachelor of education degree - Established a code of conduct for student teachers to strengthen professional norms and ethics
	3. Viet Nam	- Reformed ITE program curricula to emphasize skills in pedagogy, classroom management, curriculum design, and educational psychology - Instituted continuous ITE curriculum updates - Established an NTEP and a new four-year bachelor of education with specializations - Updated the ITE curriculum toward learner-centered, inquiry-based methods
	6. Finland	Transitioned to a research-driven model of ITE, integrating teacher training institutions into universities, requiring a bachelor’s degree and later a master’s degree
	8. Morocco	Added modules on education sciences, professional competencies, digital skills, and personal development

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies (continued)

ITE reform, by principle	Case studies	Key actions
	9. Burkina Faso	Increased ITE program length and added bilingual education modules
	10. Dominican Republic	- Transitioned ITE programs to more intensive study paths that require greater time commitment. - Updated ITE program content to align with the competency-based school curriculum and emphasize language and values education
	11. Kenya	- Launched a new primary ITE curriculum aligned with the competency-based school curriculum - Integrated ICT and digital literacy supported by new ICT hubs in ITE institutions, including to support microteaching
Enhanced foundational learning content in ITE programs	2. Zambia	Developed new literacy and language modules for the Primary Teachers Diploma based on the science of reading and the national curriculum
	10. Dominican Republic	Emphasized foundational learning pedagogy (literacy and numeracy) in the national ITE quality framework
	11. Kenya	Added language-specific literacy instruction modules to address multilingual contexts
Enhanced the connection between theory and practice in ITE programs	1. Bahrain	- Aligned bachelor of education courses and assessments with the primary school curriculum and tasks expected of teachers - Emphasized practical application through practice-based assignments and after-school engagements
	2. Zambia	Designed new ITE literacy and language modules aligned with the science of reading, the new school curriculum, and curricular materials (including in local languages)
	6. Finland	- Made ITE programs more stringent and relevant by emphasizing education research, collaboration, and ethical responsibility - Introduced reflective teaching practices, encouraging critical analysis of educational theories and application in diverse classroom settings

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies (continued)

ITE reform, by principle	Case studies	Key actions
Introduced new requirements for teacher educators or enhanced their capacity	8. Morocco	Added practical components to ITE programs such as presentations, mock classes, role-play, and small group debates, emphasizing conceptual understanding and interpersonal skills (particularly communication)
	11. Kenya	Integrated action research in ITE programs to promote continuous instructional improvement
	1. Bahrain	- Changed the language of instruction in ITE programs - Recognized master practitioners alongside PhD holders for faculty roles - Recruited faculty with both academic credentials and classroom experience
	2. Zambia	- Launched at-scale upskilling of teacher educators on foundational literacy - Supported teacher educators to pursue master's degrees and international residencies - Trained teacher educators in applied research
	3. Viet Nam	Built teacher educator capacity in research, blended teaching, internal quality assurance, and curriculum development
	4. Ghana	Raised the minimum qualification for teacher educators to master's degree
	10. Dominican Republic	- Required teacher educators to hold a master's degree in their teaching subject - Gradually increased the share of full-time professors (not employed elsewhere) - Recruited professors with foreign university degrees
	Principle 3. Incorporate quality field placements for teaching experience and practice	
	1. Bahrain	- Integrated field placements in each year of the bachelor of education, progressing from class observation to guided teaching responsibility - Added an exit-examination presentation on practical learning, guided by a booklet of expectations, tasks, and rubrics shared with the student teacher, mentor teacher, and faculty mentors - Placed student teachers in a variety of schools each year for varied exposure

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies *(continued)*

ITE reform, by principle	Case studies	Key actions
	2. Zambia	• Introduced a cohort-based “school experience” in nearby schools to enable frequent and low-cost supervision (four to five student teachers for peer support) • Assigned teacher educators to cohorts with weekly contact and observations twice per term • Required mentor teachers to observe and coach student teachers on a weekly basis
	3. Viet Nam	• Improved field placement structure and increased guided reflective practices to identify strengths and areas for improvement
	4. Ghana	• Extended field placements across all four years of the bachelor of education with progressively greater classroom responsibility
	6. Finland	• Established university-linked training schools for classroom experience under the guidance of expert mentors • Designed multistage, well-supervised placements beginning early and extending over multiple years
	8. Morocco	• Added a hands-on professional experience module from the first bachelor of education semester • Introduced a paid, one-year induction program as part of the postgraduate ITE professional program, where student teachers take on a trainee-teacher role with full classroom responsibility while also participating in distance learning, action research, and workshops
	9. Burkina Faso	• Added a field placement in the second year of ITE (960 hours) in a school close to the ITE institution • Required a field placement report and a practical assessment by a jury (teacher, inspector, and teacher educator)
	10. Dominican Republic	• Introduced mandatory field placements, often in nearby professional development schools
	11. Kenya	• Extended field placements to two full terms (three months each), aligned with coursework and mentor teacher support • Developed standardized lesson observation tools for structured assessment and feedback

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies (continued)

ITE reform, by principle	Case studies	Key actions
Included alternative methods to gain practical teaching skills	1. Bahrain	• Used model teaching videos from around the world for lesson study
	2. Zambia	• Embedded peer teaching and microteaching with children from local schools in ITE modules
Supported capable teachers interested in mentoring student teachers	1. Bahrain	• Recruited exceptional bachelor of education graduates as faculty to supervise field placements
	4. Ghana	• Provided rigorous mentor-teacher training and incentives (stipends, performance evaluations, and ongoing professional development)
	6. Finland	• Trained mentor teachers to provide high-quality mentorship during field placements
Utilized ITE courses to prepare student teachers for field placements	11. Kenya	• Required 300 hours of microteaching, with reflective journals and e-portfolios, as a prerequisite for the field placement
Principle 4. Align institutions for responsive, efficient, and quality-driven ITE		
Enabled coordination across government departments, ITE institutions, and civil society	1. Bahrain	• Established a governance partnership for the national teachers college (including the national university, MOE, and national economic board) • Created a multistakeholder board chaired by an MOE undersecretary • Ensured timely sharing by the MOE of future plans to allow the national teachers college to prepare
Promote collaboration across ITE institutions and schools, including for field placements and sharing expertise	1. Bahrain	• Conducted three-way meetings (student teacher, teacher educator, mentor teacher) at least three times a semester to foster alignment across learning in the college and field placements • Instituted school principal feedback on graduate readiness to inform ITE program adjustments
	2. Zambia	• Convened school principals, ITE college administrators, and teacher educators to find ways to work collaboratively to enhance education and better prepare student teachers

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies (continued)

ITE reform, by principle	Case studies	Key actions
	3. Viet Nam	Built links between LTTUs and schools through core teachers and school leaders, giving the universities greater exposure to the realities of schools and fostering demand-driven ITE and CPD program development
	11. Kenya	Mandated a memorandum of understanding framework between ITE institutions and networks of selected primary schools to strengthen relationships in support of student teachers' development
Ensured strong links between ITE institutions and CPD providers, induction programs, and/or research programs	1. Bahrain	Linked the national ITE institution with CPD through the provision of programs such as teacher and school leadership in-service programs
	3. Viet Nam	- Upgraded existing teachers' qualifications through paid, intensive training at the new regional and national teacher training institutions with careful planning over many years to ensure class coverage by other teachers - Provided targeted refresher courses for teachers, especially in rural and disadvantaged areas - Designated and built the capacity of eight LTTUs to upskill teachers through in-service training (particularly core teachers) - Implemented a learning management system to facilitate blended learning in ITE and CPD
	7. India	Established District Institutes of Education and Training as district hubs for ITE, CPD, action research, curriculum development, documentation of innovations, and district-specific issues
Principle 5. Enhance quality assurance processes to maintain high standards in ITE		
Established standards and regulations as a basis for quality assurance	3. Viet Nam	- Standardized core ITE curricula with flexibility for local electives - Introduced National Teacher Standards as benchmarks for knowledge, professional ethics, pedagogical skills, and professional development - Introduced the Teacher Education Institutions Development Index for self-assessment and planning

(continued)

Table S.1 Cross-Referenced Guide to ITE Case Studies (continued)

ITE reform, by principle	Case studies	Key actions
	4. Ghana	- Established National Teachers' Standards through extensive stakeholder consultation - Introduced a standardized bachelor of education program to streamline degree offerings
	5. Chile	Developed and updated comprehensive standards for teacher preparation
	10. Dominican Republic	- Published Professional and Performance Standards for the Accreditation and Development of the Teaching Career - Enacted regulations detailing requirements for high-quality ITE content and management
	11. Kenya	Introduced teacher professional standards and an aligned ITE curriculum specifying competencies, knowledge, values, and skills
Introduced accreditation of ITE institutions or programs, or institutions of excellence	3. Viet Nam	Designated LTTUs to drive reform, CPD, research, and quality improvement
	5. Chile	Mandated external accreditation for all ITE programs and institutions, leading to the closure of nonaccredited providers
Introduced other processes for quality assurance and accountability of ITE institutions or programs	4. Ghana	Created a National Implementation Support Team whereby public universities mentor colleges and conduct external assessments aligned with the National Teacher Education Assessment Policy
	5. Chile	Introduced diagnostic and pre-graduation tests to inform ITE program development and accreditation
	11. Kenya	Implemented systemic quality assurance via institutional audits, field placement monitoring, and evaluation of curriculum implementation with actionable feedback
Moved from mixed-quality ITE institutions and programs to one institution or curriculum	1. Bahrain	- Centralized teacher preparation by establishing a national teachers college as the sole provider and closing other providers - Consulted with Singapore's National Institute of Education with a two-year contextualization process

Note: CPD = continuous professional development; GPA = grade point average; ICT = information communication technology; ITE = initial teacher education; LTTUs = Lead Teacher Training Universities; MOE = Ministry of Education; NTEP = National Teacher Education Program.

Part 2

Building Better ITE: A Review of Evidence and Practice

Part 2 asks a fundamental question: How can education systems improve the quality of their initial teacher education (ITE) programs? It provides evidence on each of the five principles of effective ITE: (1) make ITE programs attractive and selective; (2) provide relevant and impactful ITE content; (3) incorporate quality field placements; (4) align institutions for responsive, efficient, and quality-driven ITE; and (5) enhance quality assurance processes to maintain high standards.

Among the numerous reviews of research on ITE over the years, those published over the past two decades have noted a paucity and continued decline of research. Structural impediments contribute to this gap. For example, research methods common in the study of in-service professional development—such as introducing a development program to one group of teachers and comparing them to a control group—are more difficult to apply to ITE because many conditions of a program (such as curriculum requirements, accreditation standards, and field placement structures) are governed at the system level. This is especially true regarding certain principles, such as aligning institutions (Principle 4). Yet even in the

absence of conclusive evidence, education systems must make decisions about how to prepare their teachers.

Given the limitations in the evidence, Part 2 provides two types of information: First, it draws on the empirical studies that do exist to identify the most effective ways to prepare teachers. Second, it complements those findings with examples of what a range of systems are implementing in practice. Although these latter examples may not be tested with the same rigor as empirical studies, they can broaden the vision of education systems by illustrating what is possible and helping stakeholders consider what may be most effective in their own contexts. Ongoing monitoring and evaluation are essential to assess the effectiveness of any innovation, because every system is distinct.

Each chapter in Part 2 explores one of the five key principles for building effective ITE, opening with key questions for policy makers and closing with areas for future research before summarizing the key takeaways.



Make ITE programs attractive and selective, targeting candidates with high potential

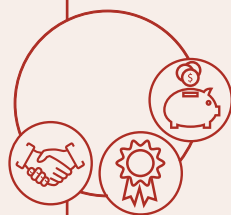
Assess and monitor teacher workforce needs

- ▶ **Conduct regular forecasting of teacher workforce requirements** by considering factors such as location, grade level, subject areas, gender, language, ethnicity, and other demographic aspects.
- ▶ **Develop strategies to adjust ITE program entry requirements** to align with workforce needs and modify program content accordingly.



Make ITE programs attractive

- ▶ **Enhance the appeal** of the teaching career by ensuring positive working conditions, providing leadership and specialist opportunities, and offering appropriate compensation.
- ▶ **Consider offering financial aid and recruitment guarantees** to ITE students upon graduation.
- ▶ **Invest in ITE institutions** to boost their prestige and attractiveness.



Implement rigorous entry requirements

- ▶ **Identify suitable candidates** based on their mastery of subject matter, proficiency in the language of instruction, interpersonal skills, and motivation to teach.
- ▶ **Make entry as selective as possible** while still meeting teacher workforce needs, and supplement ITE program content to address any knowledge and skills gaps.
- ▶ If entry requirements need to be lower than ideal to recruit enough teachers, ensure that strategies are developed to **gradually increase selectivity over the medium and long term**, while addressing immediate workforce needs.



3

Principle 1: Make ITE Programs Attractive and Selective, Targeting Candidates with High Potential

KEY QUESTIONS FOR POLICY MAKERS

Attraction

- What is the public perception of teaching? What strategies are in place to enhance its appeal (career pathways, compensation, working conditions)?
- What financial incentives are offered to attract strong candidates, including from underrepresented groups (scholarships, stipends, working conditions)?

Selection

- What are the current entry requirements for ITE programs (academic, nonacademic)? How rigorous are they?
- What selection mechanisms are used beyond academic scores (interviews, assessments of interpersonal skills, motivation)?
- If there is a limited pool of qualified applicants, what strategies are used to balance selectivity with the need to fill teacher shortages (remedial or bridging programs)?

Introduction

Applying for and being selected into an initial teacher education (ITE) program is the first step on the journey to becoming a teacher. The learning and practice that student teachers engage in during ITE play a critical role in developing their core knowledge and skills for teaching. However, even before this, attracting and selecting strong candidates into ITE programs is crucial to ensure that graduates are well prepared to enter the teaching profession and make a positive impact in the classroom.

When ITE programs can enroll candidates who demonstrate the qualities and competencies needed for teaching, these entrants are more likely to succeed in the program, contribute positively to student learning, and remain in the profession. This chapter explores key considerations for attracting and selecting strong teacher candidates, including in contexts where the pool of strong prospective candidates may be limited.

Qualities and Competencies of Prospective Primary School Teachers

To fulfill the promise of education and ensure foundational learning for all, every child should have a great and inspiring teacher with the qualities and competencies needed to meet each child's learning needs. Although ITE programs help to cultivate and develop these, it is also important to attract and select candidates who have the wide range of competencies that characterize effective teachers, from leadership and communication skills to empathy and resilience.

Foundational Subject Matter Knowledge

Teachers must have a solid grasp of the subjects they will teach, extending to a level beyond the grade curriculum (Hattie 2009). Although some of this knowledge can be developed during ITE programs, candidates must have at least baseline subject knowledge before entering ITE.

For primary school teachers, this foundational knowledge includes strong literacy skills (reading, writing, speaking, listening, and critical thinking) and mathematical skills (such as basic number and arithmetic operations, geometry, measurement, and data). A deep understanding of these subjects—acquired prior to and, in some cases, during ITE programs—enables teachers to explain concepts clearly, anticipate student questions, and make connections across topics and disciplines.

A wide array of research indicates that teachers who are high achievers or have higher cognitive skills—as assessed in literacy, numeracy, and problem solving—are more effective at boosting student test scores (D'Agostino and Powers 2009; Hanushek, Piopiunik, and Wiederhold 2019; Meroni, Vera-Toscano, and Costa 2015). Therefore, attracting and selecting primary school ITE candidates who demonstrate strong subject knowledge and higher cognitive skills in key teaching areas is essential for their success in the program and for building a capable teacher workforce. Setting higher cognitive skill standards for ITE candidates could lead to more effective teachers, as reflected in improved student outcomes and higher retention rates (Bruns and Luque 2015).

In addition, teachers increasingly need strong digital skills (UNESCO 2018). These may include proficiency in using digital tools, such as online learning platforms, or even delivering hybrid or virtual instruction. Although the demand for digital skills varies across contexts, they are likely to become an increasingly important consideration in attracting and selecting ITE candidates.

Language Proficiency

Teachers must be proficient in the language in which they teach. Without such proficiency, it is difficult to help students develop their own language skills or to convey content effectively in other subjects. Language proficiency should therefore be a critical criterion when attracting and selecting ITE candidates.

In addition, in settings where the language of instruction is different from the language most students speak at home, proficiency in students' home language can also be a valuable quality to consider in prospective ITE candidates.

Interpersonal Skills

Teachers' interpersonal skills play a crucial role in shaping the emotional climate of the classroom and the relationships between teachers and students (Jennings and Greenberg 2009; Jones, Bouffard, and Weissbourd 2013). These skills encompass a range of abilities related to understanding and managing emotions, building positive relationships, and making responsible decisions. Having strong interpersonal skills helps teachers build positive relationships with students, enables them to manage classrooms effectively, promotes student well-being, and enhances learning outcomes.

Communication skills enable teachers to convey information clearly, build strong relationships with students, foster a positive classroom environment, and promote active learning, as well as engage productively with colleagues, parents, school leaders, and others. Collaborative skills may further enhance the learning environment by promoting teamwork among students and improving teacher-student and teacher-teacher interactions (Darling-Hammond, Hyler, and Gardner 2017; Erkins et al. 2008). Adaptability allows teachers to respond effectively to changing contexts and to the diverse needs of students (Collie and Martin 2016; Stronge 2018). Given the evidence on the importance of interpersonal competencies for effective teaching, ITE programs should develop effective ways to consider these skills in the selection process.

Motivation to Be a Teacher

There is only limited evidence on the link between teachers' motivation for becoming a teacher and student learning outcomes (Lauermann 2017).

At least one study demonstrates that teachers with less intrinsic motivation can teach just as effectively if they are in an educational environment that rewards learning (Leaver et al. 2021). However, showing passion for and commitment to a teaching career can reduce burnout and turnover, which is key to a stable teacher workforce (Lauermann 2017).

Demographic Characteristics

Teachers who share students' regional or ethnic backgrounds appear to have a greater impact on learning outcomes (Bold et al. 2017; Kingdon and Aslam 2014). Teachers who speak the same home language as their students can also support communication and help connect instruction to students' social and cultural backgrounds. Additionally, having a teacher-student gender match can be beneficial in some settings: Girls, for example, may benefit from female teachers in subjects such as mathematics and science, while disadvantaged boys may benefit from male teachers as role models (Welmond and Gregory 2021). These potential benefits point to the value of a diverse teaching workforce. Where gender imbalances exist, ITE recruitment may consider gender representation alongside other equity and quality goals.

ITE and Teacher Workforce Needs

Factors such as labor market conditions and the supply of and demand for teachers play significant roles in determining both the quality and quantity of candidates entering ITE programs. Although a full analysis of teacher labor markets, and their interactions with broader national labor markets, is beyond the scope of this report, the following sections examine ways to attract stronger candidates into ITE.

Teacher Supply and Demand

Labor market conditions directly affect the attractiveness and selectivity of ITE. When teaching is perceived as an appealing career relative to other professions requiring comparable skills and education, ITE programs tend to attract more applicants, including higher caliber candidates. This allows ITE institutions to be more selective in their admissions. Conversely, when teaching is less attractive than other career options, ITE programs may struggle to attract strong candidates and may have less flexibility to be selective.

Understanding the characteristics of prospective candidates and the broader workforce—including candidates’ education levels, language proficiency, and attitudes toward teaching—can inform policy decisions about whether to focus on making ITE more attractive or more selective (Lewin 2004; Zuilkowski et al. 2021). In contexts with an oversupply of prospective teachers, ITE can afford to be more selective and reduce admissions to address the imbalance. Conversely, when there is a high demand for teachers, systems may need to be less selective to ensure sufficient numbers of student teachers.

Burkina Faso’s recent reform of ITE illustrates how labor market factors can influence the feasibility and outcomes of reforms (Case Study 9). In 2020, the government raised the entry requirement for ITE from a lower secondary diploma (in place since 1960) to a senior secondary diploma. This reform was facilitated by a weak job market: ITE programs could afford to move toward greater selectivity. However, early data suggest that the new requirements have resulted in a higher proportion of men in ITE cohorts—a potential concern in a country that had only recently achieved near gender parity in the primary teaching workforce. Changes to entry requirements and broader labor market factors can affect not only the caliber of candidates but also their demographic characteristics, which should be considered when designing reforms.

Peru provides another example, where the introduction of stricter entry requirements for teacher training schools in 2006—including a writing test, interview, and minimum competency threshold—caused ITE enrollments to drop from 11,000 to fewer than 400 in one year. This led to concerns about teacher shortages and the potential closure of some institutions. In 2012, admissions control was returned to training institutions, albeit with enrollment caps, underscoring the need to balance selectivity with system demand for teachers (Bruns and Luque 2015).

Assessing and Monitoring Teacher Workforce Needs

Determining teacher demand within education systems is a complex and dynamic process (UNESCO and TTF 2024) involving the number of teachers the system needs and key features of those teachers, including factors like language, subject, and geographic distribution. To ensure that the right candidates are attracted, selected, and deployed where they are most needed, education authorities must establish robust mechanisms for assessing and monitoring workforce needs.

This process requires reliable, up-to-date data, thorough analysis, projection models, and effective decision-making tools (Rockoff et al. 2008). Regular forecasting of needs should consider factors such as location, grade level,

subject area, gender, language, ethnicity, and other demographic aspects. Insights from these assessments can inform adjustments to ITE program entry requirements and content, ensuring alignment with current and future workforce needs (see Principle 4 in chapter 6).

Attracting Strong Candidates into ITE

Many top-performing education systems attract enough strong candidates that they can be highly selective. In Finland and Singapore, for example, only about one-fifth of applicants were chosen for entry into ITE, and they come from the top one-third of secondary students (Bruns and Luque 2015). In recent years in Finland, approximately one-tenth of primary school teacher education applicants are accepted, reflecting the outcomes of rigorous academic aptitude screening processes (Varis et al. 2025). In many systems, however, teaching is not a top profession of interest for young people (UNESCO and TTF 2024; World Bank 2023), and strong students admitted to higher education institutions generally do not choose ITE.

In some systems, ITE is seen as a more attainable route into tertiary education, and candidates who are not strong enough to enter their discipline of choice at university may enroll in ITE programs and try to switch later. For example, in Botswana, students who did not qualify for entry into a bachelor of science program in mathematics would sometimes apply for the bachelor of education program, intending to switch if they performed well enough, which left weaker students to be trained as teachers (Ingvarson et al. 2013).

The attractiveness of ITE depends both on the appeal of the programs and institutions providing it and the attractiveness of the teaching profession more broadly. Interest in becoming a teacher may be informed by remuneration, working conditions, development and support structures, career progression opportunities, and the personal gratification the profession can provide (UNESCO and TTF 2024). Addressing many of these factors requires broad system-level action to enhance the attractiveness of the profession. Alongside this, steps can also be taken to improve the appeal of ITE itself. In strong education systems such as in Finland and Singapore, a combination of factors related to both ITE (such as high-quality programs and financial subsidies) and the profession as a whole (such as competitive salaries) help to attract high-quality candidates into ITE (Darling-Hammond 2017).

Enhancing the Prestige of ITE Institutions

Well-respected ITE institutions can help build the perception of teaching as an appealing, professionalized career and draw strong candidates. Adequate

infrastructure (such as libraries, student accommodations, internet access, and well-equipped classrooms); qualified teacher educators and other staff; strong leadership; innovative curricula; and research capacity can all signal high quality to prospective candidates. Accreditation of ITE institutions can also signal quality to prospective candidates (see Principle 5 in chapter 7). A strong track record of graduate employment can also enhance the attractiveness of ITE because it shows that this education is a pathway to a stable (often civil service) job.

Additionally, raising the academic qualifications of teachers—as seen in Viet Nam and Finland (Case Studies 3 and 6, respectively)—can help elevate the prestige of both ITE and the teaching profession as a whole (OECD 2014, 2023). In Bahrain, the establishment of Bahrain Teachers College as a flagship teacher education institution, replacing all other teacher education colleges in the country, allowed for greater selectivity (including through scholarships and higher selection criteria) and the implementation of a rigorous curriculum. Bahrain Teachers College’s prestigious reputation has helped reinforce the attractiveness of ITE in Bahrain (Case Study 1).

Better outreach by both ITE providers and other education system actors may help attract larger numbers of strong prospective candidates. Government or civil society-led communication and recruitment campaigns can encourage secondary school students to consider applying to ITE programs. ITE providers may also engage in outreach and marketing efforts. In Pakistan, for example, ITE institutions advertise by highlighting accreditation, scholarships, and other features (Khan, Khan, and Sultana 2018). However, advertising efforts sometimes promote low-quality ITE institutions, highlighting the need for rigorous quality assurance—especially in highly saturated marketplaces—to ensure that candidates are being attracted into strong programs (see Principle 5 in chapter 7 for more detail on quality assurance).

Looking ahead, ITE institutions will also need to ensure their relevance and attractiveness by better communicating their ability to address contemporary issues (UNESCO and TTF 2024). Preparing student teachers to navigate the use and role of information and communication technology (ICT) in teaching can help ITE institutions remain relevant. As artificial intelligence becomes more prominent, ITE institutions must be able to demonstrate their command of this fast-growing technology; high-performing countries such as Finland and the Republic of Korea have made considerable progress in this area (UNESCO and TTF 2024).

Lowering Financial Barriers to ITE

Providing financial support to students—usually with a requirement to teach for a certain number of years—is a common strategy for attracting

candidates into ITE. The Dominican Republic, Morocco, and Viet Nam made financial support for student teachers a part of their reform efforts (Case Studies 10, 8, and 3, respectively). This financial aid can include free tuition, scholarships, subsidized accommodation, living stipends, and paid field placements. Financial support can also be used to attract targeted candidates into teaching, including those from underrepresented language or ethnic groups, underrepresented genders, or teachers of subjects in high demand.

In South Africa, the Funza Lushaka Bursary Programme (FLBP) provided scholarships to approximately 15 percent of ITE students between 2007 and 2012. Full scholarships were given to high-achieving students studying in priority areas, with graduates expected to teach in public schools for an equivalent number of years. An evaluation indicated that the FLBP was broadly effective (and cost-effective) in attracting students with strong academic performance, who completed ITE programs in good time, and who took up government-paid positions in public schools (Lewin et al. 2016).

Selecting Strong Candidates into ITE

When accounting for labor market and teacher supply issues, systems should aim for the highest selectivity possible while also meeting the demand for teachers. Ideally, systems would set flexible but demanding entry requirements to address immediate teacher workforce needs while also implementing longer-term efforts to progressively raise these requirements.

In line with these requirements, systems may consider a variety of selection mechanisms, ideally assessing multiple qualities of ITE candidates. Selecting potential teachers based on observable characteristics is notoriously challenging (Rockoff et al. 2008). Some evidence suggests that candidates with stronger academic performance tend to perform better as teachers (D’Agostino and Powers 2009; Hanushek, Piopiunik, and Wiederhold 2019; Neilson et al. 2022). Additionally, some research indicates that performance on school-leaving examinations can be a strong predictor of future teaching effectiveness (Lewin 2004). Research from the United States suggests that a combination of cognitive and noncognitive factors is more predictive of new teachers’ performance than any single factor alone, indicating that schools or hiring entities may benefit from using a range of criteria (Rockoff et al. 2008). ITE selection processes could likely benefit by similarly incorporating a range of criteria, with a significant weight on previous academic performance.

National Teaching Standards

National Teaching Standards are a useful starting point for informing decisions about selecting candidates into ITE (Bruns and Luque 2015; Darling-Hammond 2017). Well-formulated national standards can serve as a baseline for recruiting candidates who demonstrate the required competencies, skills, and knowledge. This alignment can help ensure that incoming candidates possess the foundational qualities needed to meet professional expectations upon entering the teaching force.

Selection Mechanisms

Most countries use academic results of secondary (or tertiary) education as the primary selection criteria for ITE, often with minimum “cutoff” grades (OECD 2014). Using examination results—either from prior education levels or from entrance examinations—helps ensure that candidates meet a baseline level of subject knowledge and language proficiency, which can improve the caliber of those selected into ITE. (See Bruns and Luque [2015] for discussion of the experience of several Latin American countries that test candidates for academic ability.) However, such tests do not consider other factors such as interpersonal skills and so may be most effective when complemented by other measures.

A combination of technically sound selection methods—tests, language assessments, portfolios, and interviews—can help ITE institutions capture a more holistic picture of candidates, including interpersonal skills and motivation to teach. However, mechanisms such as interviews are more time-intensive and logistically challenging, especially in low-resource contexts, and must be well designed and implemented to meaningfully strengthen the suitability of candidates selected into ITE programs. In systems where some candidates may have worked as untrained teachers (for example, as contract teachers), prior performance could also be considered if that has been evaluated systematically (Lewin 2004). Considering prior teaching experience or experience working with children can also help systems select candidates with the interpersonal skills and motivation to teach. Box 3.1 provides more detail on the admissions approaches used by different systems.

As part of its ITE selection process, Morocco recently developed a behavioral and technical assessment focused on teacher candidates’ socioemotional and personality skills (Case Study 8). This assessment, used alongside other selection mechanisms focused on academic knowledge and pedagogical skills, allows the system to select for a wider variety of knowledge and competencies than a single mechanism alone.

Box 3.1**Entrance Examinations for ITE Admission and Teacher Preparation**

Admission requirements for initial teacher education (ITE) programs vary significantly across the world, reflecting differences in education systems and contexts, policy priorities, and societal expectations of teachers. While some countries rely primarily on national tertiary entrance examinations, others adopt more comprehensive admission criteria, drawing on broader sources of evidence to assess a candidate's potential to complete the program and become a teacher.

Examinations for Tertiary Education Admission

For many countries, the high-stakes, standardized examinations for entrance into tertiary education serve as the main admission criteria for ITE programs. For example, the General Certificate of Education (GCE) Advanced Level examination in Singapore, the West African Senior School Certificate Examination (WASSCE) in Ghana, and the Saber 11 examination in Colombia all function as gatekeepers for higher education admission. These centralized examinations provide a standardized way to assess students' academic competencies, ensuring that only those who meet specific performance levels can access university programs.

Specific ITE Program Examinations

In some cases, including when ITE programs are at the postgraduate level, specific examinations for ITE program admission are used. For example, in Finland, the VAKAVA—a national entrance examination for postgraduate ITE programs—is specifically designed to assess candidates' educational knowledge and critical thinking skills (Varis et al. 2025). This emphasis on domain-specific examinations ensures that candidates possess the analytical and reflective abilities necessary for the teaching profession.

Other Types of Assessment for ITE Admission

Beyond examinations, some countries incorporate additional selection mechanisms, such as interviews and aptitude tests, to assess qualities essential for teaching that cannot be ascertained through written, standardized examinations. For example, in Finland and Singapore, short-listed candidates who meet the minimum scores in the respective national examinations may undergo interviews, aptitude tests, and simulated teaching exercises to evaluate their motivation, communication

(continued)

Box 3.1**Entrance Examinations for ITE Admission and Teacher Preparation (*continued*)**

skills, and other personal characteristics not captured by standardized tests. This multilayered approach recognizes that effective teaching requires more than academic proficiency: it demands interpersonal skills, adaptability, and a deep commitment to the profession, factors that cannot be measured through standardized examinations alone.

Ensuring Minimum Literacy and Numeracy Standards

In many countries, there are concerns about primary school teachers' levels of literacy and numeracy because these are foundational skills for children. Candidates interested in primary school teaching are often not strong in, or lack confidence with, mathematics. Selection criteria for ITE programs can set minimum requirements for literacy and numeracy.

In addition, foundational skills tests—such as Australia's recently introduced Literacy and Numeracy Test for ITE Students—are designed to assess student teachers' personal literacy and numeracy skills, ensuring they are well equipped to meet the demands of teaching (ACER, n.d.). All student teachers are expected to sit the test in the first year of their ITE program and must meet the standard before graduating.

Oversight of Admission Examinations

In some countries, such as Colombia, Finland, Ghana, and Singapore, centralized institutions oversee national examinations for tertiary education admission, including specific ITE program examinations, ensuring consistency across different regions and institutions. These institutions generally develop, administer, and regulate the examinations. This centralization allows for standardization in the expected academic achievement of prospective teachers nationwide.

Even in countries with centralized admission systems, universities and teacher colleges often retain some autonomy to set additional entrance requirements. For example, although Finland's universities develop and oversee the VAKAVA examination, which is standardized at the national level, they retain their autonomy and may still require aptitude tests, problem-solving tasks, or interviews to assess candidates' suitability for the profession (Varis et al. 2025). Similarly, in Colombia and Ghana, although SABER 11 and WASSCE scores play a decisive role in admissions, individual institutions may impose minimum grade

(continued)

Box 3.1**Entrance Examinations for ITE Admission and Teacher Preparation (*continued*)**

thresholds in core or elective subjects or require additional evidence, such as interviews or essays, to refine their selection process.

In contrast, some countries adopt a fully decentralized approach to ITE program admissions—whereby there is no single, national higher education entrance examination, and each university or teacher training college sets its own admission criteria. For example, in Pakistan, while the Higher Education Commission provides overarching guidelines, provinces and institutions have autonomy to design their own selection processes. This decentralized system reflects the country's diverse educational landscape, allowing universities to tailor admissions based on local needs and priorities.

Contextual Considerations

Differences in assessments for ITE admission and teacher preparation often stem from the education level at which teacher education begins. For example, Finland requires teachers to complete master's-level training, reinforcing the profession's status as a highly specialized field requiring advanced study. In contrast, Colombia, Ghana, Pakistan, and Singapore all start ITE at the bachelor's level, making teacher education more accessible at an earlier stage of higher education. Where ITE is at the secondary school level, different considerations for admission criteria are needed, with corresponding adjustments to program content.

These varied approaches reflect national decisions about the role of teachers and the pathways required to prepare them. Countries that emphasize high-stakes national examinations may view academic excellence as the primary determinant of teaching quality, while those that incorporate aptitude tests and interviews also recognize the importance of personal disposition and pedagogical skills. Meanwhile, decentralized systems offer flexibility to accommodate regional and institutional variations but may result in uneven standards across the country.

Ultimately, admission policies for ITE programs should be designed to meet countries where they are in terms of educational development, education system structure, workforce needs and demographic projections, and teaching-quality objectives. In countries with large disparities in education access, flexible admissions criteria may help diversify the teacher workforce and recruit candidates from underrepresented backgrounds. In contrast, nations striving for elite

(*continued*)

Box 3.1**Entrance Examinations for ITE Admission and Teacher Preparation (*continued*)**

professionalization of teaching may impose stringent selection mechanisms to maintain high standards.

As global discussions on teaching quality evolve, policy makers must carefully balance standardization with flexibility, ensuring that ITE program admission requirements uphold high academic and professional standards while also addressing equity concerns. There is no single “best” approach to ITE program admissions. What matters most is whether these policies effectively prepare teachers who can meet the learning needs of diverse student populations in their respective contexts.

Attracting and Selecting in Challenging Contexts

Some education systems face difficulties in attracting enough strong candidates into ITE. This challenge is particularly acute in contexts where many young adults do not have strong language proficiency and subject mastery. When the labor pool is narrow—with only a small number of suitable potential candidates—it can be difficult to attract enough individuals who meet the desired criteria for ITE, especially if teaching is not considered an attractive profession. This issue is often more pronounced in education systems where large numbers of students leave secondary education without adequate literacy and numeracy skills. On the demand side, countries experiencing significant teacher shortages may find it especially challenging to attract enough ITE candidates who meet the desired standards.

In response to these challenges, systems may need to consider easing entry requirements for ITE, at least in the short term, to ensure an adequate supply of candidates. When this occurs, ITE programs and systems must address knowledge and skill gaps—for example, through remedial or bridging programs that build language proficiency or subject matter knowledge (see chapter 4). These courses may be offered by ITE institutions or through parallel programs such as university or college courses. However, in the long term, as the teacher workforce expands and education quality improves, raising selectivity requirements will help to further enhance quality in ITE and across the education system.

In addition, selectivity mechanisms can be implemented at the end of ITE through exit examinations and certification (see chapter 7 for more on certification). Exit standards can focus on factors such as successful completion of coursework, assessments of student teachers' practice and learning during field placements, and examinations in key subject areas (Wang et al. 2003). Such selection mechanisms may be particularly useful in settings where the pool of prospective candidates has relatively low knowledge or skills and imposing rigorous entry requirements may be too restrictive to ensure sufficient numbers of ITE entrants.

Areas for Future Research: Remaining Evidence Gaps

The following areas for future research related to making programs attractive and selective represent notable gaps in the education evidence base (particularly in low- and middle-income country contexts) and warrant targeted investigation:

- *Which teacher career policy levers* most strongly influence the supply of high-potential applicants to ITE programs, and how do these effects vary with labor market conditions? These levers could include compensation and benefits, career progression pathways, workload and working conditions, school placement, and the perceived professional status of teaching.
- *Among ITE entry requirements and selection mechanisms*, which indicators best predict success in preparation and subsequent classroom effectiveness and retention? These could include prior academic achievement; subject-matter proficiency; structured interviews; situational judgment tests; teaching aptitude tests or work samples; assessments of personal and interpersonal competencies (such as conscientiousness, growth mindset, and communication skills); and measures of motivation for teaching (such as intrinsic motivation, prosocial commitment, and persistence).
- *What remedial or bridging pathways* most quickly and effectively enable candidates admitted with lower entry standards to meet program benchmarks and achieve comparable early-career teaching outcomes, without compromising overall teacher effectiveness? These could include design features of remediation programs such as duration; curriculum focus (literacy or numeracy); delivery mode (intensive bootcamps or tutoring); and diagnostic placement.

- *How effective are early diagnostic assessments and targeted supports in improving foundational competencies among ITE cohorts with heterogeneous skills? These could include timing, dosage, adaptivity, and feedback mechanisms that maximize learning gains and reduce attrition.*
- *Of the teacher characteristics, skills, and dispositions that predict effective teaching, which are most feasibly developed during ITE, and which are better addressed through selection into ITE? These could include refining selection criteria and processes to target attributes not taught in ITE; streamlining the ITE curriculum; and recognizing candidates' prior learning.*

Key Takeaways

This chapter has presented issues around attracting and selecting strong teacher candidates into ITE programs. Key takeaways include the following:

- *Attracting and selecting strong candidates into ITE is a crucial first step to ensure that ITE prepares excellent teachers. Key qualities of strong primary school teachers—such as foundational subject matter knowledge, proficiency in the language of instruction, collaboration and communication skills, and motivation to be a teacher—should be considered when determining the candidate profile to be targeted and selected for ITE programs.*
- *Labor market analyses and data-driven teacher forecasting are critical to inform efforts to attract and select the strongest ITE candidates possible while meeting system needs for new teachers. Mechanisms for assessing and monitoring teacher workforce needs should be embedded in the system to ensure that entry requirements and selection mechanisms are aligned with both quality and supply needs.*
- *Attracting strong candidates to ITE requires making teaching an appealing career through broader reform efforts and ensuring that ITE programs are enticing to prospective candidates. Financial aid, such as ITE scholarships, can be offered to attract candidates, particularly from key demographic groups. When ITE institutions themselves are considered prestigious, they are more likely to attract strong candidates.*
- *Education systems should consider using a combination of methods and criteria to select strong and suitable candidates for entry into ITE programs. This includes examining candidates' relevant academic, interpersonal, and*

socioemotional skills. Flexible but demanding entry requirements are important to meet broader teacher workforce needs, including ethnic, language, geographic, and gender dimensions.

- *Where ITE programs do not attract enough high-quality candidates, it may be necessary to review entry standards for ITE programs, at least in the short term, and provide additional education and training. ITE programs and systems should respond to knowledge and skill gaps—for example, through remedial or bridging programs.*

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Provide relevant and impactful ITE program content by skilled teacher educators

Ensure adequate subject matter knowledge

- ▶ **Integrate content focused on core primary school subjects**, especially language and mathematics, to ensure teachers possess mastery that exceeds the level they are expected to teach.
- ▶ **Offer bridging classes or remedial instruction to address gaps in** language proficiency or subject knowledge.

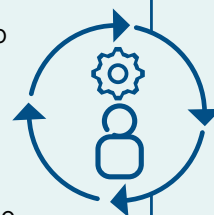


Build subject-specific and general pedagogical knowledge and skills, and develop strong teacher professional identities

- ▶ **Incorporate content that builds student teachers' understanding** of how children learn and develop, with a focus on foundational skills such as literacy and numeracy.
- ▶ **Equip student teachers with practical skills** in planning lessons, teaching, assessing, creating positive learning environments, and addressing diverse student needs.
- ▶ **Foster an understanding of ethical considerations**, responsibilities, and professional norms for primary school teachers.

Use ITE program teaching methods that connect theory to practice

- ▶ **Provide ample opportunities** to apply theoretical knowledge in practice, reflecting classroom realities.
- ▶ **Model high-quality teaching practices** for student teachers to observe and replicate.



Attract and support excellent teacher educators

- ▶ **Prioritize hiring teacher educators who have a strong conceptual understanding and practical experience** of classroom teaching.
- ▶ **Offer ongoing professional development**, including school visits, to keep teacher educators updated on the latest education research and practices.

4

Principle 2: Provide Relevant and Impactful ITE Program Content by Skilled Teacher Educators

KEY QUESTIONS FOR POLICY MAKERS

Curriculum Content

- How does the initial teacher education (ITE) curriculum ensure mastery of subject matter, especially foundational literacy and numeracy?
- How does the curriculum build pedagogical knowledge (general and subject-specific), including child development and the science of learning?
- How are practical skills (lesson planning, assessment, classroom management) and inclusive education practices integrated?
- How is a strong professional identity fostered (ethics, norms, collaboration)?

ITE Teaching Methods and Teacher Educators

- What teaching methods are used to bridge theory and practice (microteaching, lesson study, modeling)?
- What are the qualifications and experience requirements for ITE teacher educators? What professional development is available to them?

Introduction

Effective initial teacher education (ITE) programs prepare student teachers to enter the classroom with confidence. Program content is typically organized around key topics or themes and delivered through courses or modules that combine hands-on activities and assignments that link theory

to practice. When well designed, ITE programs provide a strong foundation of core knowledge and skills for teaching, foster a clear understanding of the professional role, and equip new teachers to succeed in the realities of the classroom and benefit from future professional development opportunities.

This chapter outlines the key components of ITE curricula, discusses teaching methods used in ITE programs and the role of teacher educators in ITE institutions, and considers catch-up and continuing learning opportunities for in-service teachers. Given their significance, field placement experiences within ITE programs are discussed in chapter 5.

Core Content of Primary School ITE Programs

ITE programs should equip student teachers with a comprehensive understanding of the subject matter they will teach, effective teaching methods (both general and subject-specific pedagogy), strategies for creating positive learning environments, and a strong sense of teacher professional identity (Darling-Hammond and Bransford 2005; Darling-Hammond et al. 2022). This content transmits an understanding of key concepts in education and child development relevant to the age group they will teach; a broad repertoire of effective teaching methods for primary school subjects, especially foundational literacy and numeracy; awareness of age-appropriate developmental expectations; the ability to recognize and create positive learning environments; and skills in planning for learning, including both general curriculum development and specific lesson planning. ITE programs should also help student teachers connect education theory to practice, enabling them to apply conceptual knowledge in real-world teaching situations.

In practice, the content and structure of ITE programs vary widely across countries and institutions. In some contexts, the ITE curriculum is shaped by national regulations, teacher standards, and accreditation frameworks (chapter 7). For example, the Dominican Republic recently updated its ITE curriculum to align with a new teacher framework (Case Study 10).

In other contexts, teacher educators themselves develop the curriculum (for example, Caena 2014; DfE England 2024; Lewin and Stuart 2003).

A common approach to defining the core content of ITE programs is to start by identifying what teachers need to know and be able to do, based on research into effective teaching (for example, Darling-Hammond and Bransford 2005; Molina et al. 2018).

This research-based understanding is then mapped backward onto course content, resulting in a framework for ITE programs. Ghana’s National Teacher Education Curriculum is one such example, as summarized in table 4.1. Other frameworks—such as those developed by the Australian Institute of Teaching and School Leadership (AITSL 2015), Darling-Hammond et al. (2022), and England’s Department for Education (DfE England 2024)—also reflect this evidence-based approach to teacher preparation.

Subject Matter Knowledge

In most countries, primary school teachers are expected to teach a wide range of subjects across the entire curriculum. They are often required to work with all primary school grades during their careers or within specific grade bands, such as lower or upper primary (Bruns and Luque 2015; Hardman et al. 2011; Pryor et al. 2012). As a result, it is essential that they possess a strong understanding of the key subject matter included in primary school curricula.

Given the central role of foundational skills, primary school teachers must be proficient in the language of instruction and have a deep understanding of foundational literacy and numeracy—at a level that exceeds the requirements of the grades they will teach. The type and length of ITE program, as well as the educational background of entrants (whether secondary school graduates or those with bachelor’s degrees), influence the extent to which programs need to reinforce these foundational skills.

Table 4.1 Framework at a Glance: The Keys to Success in Teacher Education (Ghana)

Four pillars of teacher education	Cross-cutting issues
Subject and curriculum knowledge	• Equity and inclusivity
Literacy studies (Ghanaian languages and English)	• Professional values and attitudes
Pedagogic knowledge	• Assessment strategies
Supported teaching in school	• Other core teaching skills
	• Information and communication technology (ICT) skills

Source: Adapted from Ghana MOE and T-TEL 2017, 8.

ITE content should be tailored to the starting point of student teachers' literacy and numeracy skills. Even when student teachers have previously acquired these skills, they may lack confidence or mastery across all core curriculum subjects and may benefit from refresher materials or opportunities to relearn content (Bonnet 2008; Bruns and Luque 2015; Mulkeen 2010). This is particularly common for mathematics, where confidence among primary school teachers is often lacking. ITE programs should therefore provide opportunities for student teachers to revisit and strengthen their subject matter knowledge. Box 4.1 offers examples of courses designed to reinforce subject matter content, as commonly found in primary school ITE programs worldwide.

Box 4.1

Courses on Subject Matter Knowledge in ITE Programs

These courses are designed to ensure mastery of content in the core subjects required for primary school teaching, such as literacy, mathematics, science, arts, and humanities. By taking these courses, future teachers develop a strong understanding of the topics that they will be expected to teach. The extent to which such courses are needed in an initial teacher education (ITE) program depends on the academic attainment of the candidates.

Examples of subject matter courses from ITE programs around the world include the following:

- Language and Communication
- Exploring the Language and Structure of Text
- Nature of Language
- Language Skills
- Academic Reading and Writing
- The Arts in Education
- Modern History of the Nation
- Core Social Studies
- Foundations of Primary Mathematics
- Mathematics for Foundation Phase Teachers
- Introduction into Study of Mathematics
- Mathematics in the Modern World
- Mathematical Processes
- Core Natural Sciences
- Integrated Science Foundations
- Foundation Phase Mathematics

Note: Specific course title examples are from a convenience sample of primary ITE programs across world regions.

Depending on the preparedness of entrants, some ITE programs may need to offer remedial instruction or allocate additional time to foundational learning. In some contexts, this is achieved through foundational or bridging courses delivered prior to the main ITE program, ensuring that student teachers have sufficient mastery of language and other key subjects. For example, such programs have been incorporated into ITE reforms in Bahrain and the Dominican Republic (Case Studies 1 and 10, respectively).

When student teachers' content knowledge is limited, teacher educators may need to integrate subject matter learning with pedagogical training. For example, when student teachers are required to prepare lesson plans on unfamiliar topics, they can be encouraged to deepen their understanding of the subject matter as part of the planning process. Similarly, when teacher educators model lessons, student teachers should be prompted to focus not only on teaching methods but also on the underlying content. This approach allows them to learn or consolidate subject matter knowledge and gain confidence in it while simultaneously developing their pedagogical skills.

Pedagogical Knowledge

Beyond mastering the subject matter they will teach, prospective primary school teachers must develop a conceptual understanding of teaching and learning as well as the pedagogical knowledge necessary to put this understanding into practice. Both general and subject-specific pedagogical knowledge are essential components of high-quality teacher preparation.

General Pedagogical Knowledge

ITE programs are often the first formal setting where future primary school teachers gain a solid foundation in child development and the science of how children learn. These programs introduce student teachers to key learning theories and research on general teaching methods that are applicable across all subjects. Core topics typically include strategies for engaging learners; approaches to assessing student learning and providing constructive feedback; and essential skills such as developing specific learning objectives and lesson planning (Darling-Hammond and Bransford 2005; Darling-Hammond et al. 2022).

Box 4.2 provides examples of courses commonly found in primary school ITE programs worldwide that focus on developing general pedagogical knowledge.

Box 4.2**Courses on General Pedagogical Knowledge in ITE Programs**

These courses focus on how children learn and develop. They also address strategies for engaging students, assessing their learning, and providing effective feedback. These courses help ensure that future teachers gain a comprehensive understanding of the learning process and acquire essential classroom instructional techniques.

Examples of general pedagogical knowledge courses offered in initial teacher education (ITE) programs around the world include the following:

- Educational Psychology: Theories and Application for Learning and Teaching
- The Child and Adolescent Learners and Learning Principles
- Child Development
- Psychology of Child Development
- Developmental Psychology
- Applying Learning Theories in Primary Education
- Neuropsychology of Learning Assessment for Learning
- Assessing and Evaluating Learning
- Assessment in Education
- Play Theory in Primary Education
- Technology for Teaching and Learning
- Integrating Digital Technology in Education
- Information and Communication Technology (ICT) for Meaningful Learning

Note: Specific course title examples are from a convenience sample of primary ITE programs across world regions.

Subject-Specific Pedagogical Knowledge

In addition to the general pedagogical knowledge that applies across primary school subjects, student teachers need to learn about effective teaching methods that apply to specific topics—that is, how to teach particular subject matter. Box 4.3 gives an indication of the types of courses that cover subject-specific teaching strategies that are commonly found across the world.

Box 4.3**Courses on Subject-Specific Pedagogical Knowledge in ITE Programs**

These courses focus on teaching strategies tailored to particular subjects. They equip teachers with the skills and understanding they need to effectively teach specific subject matter.

Examples of subject-specific pedagogical courses offered in initial teacher education (ITE) programs around the world include the following:

- Teaching Reading and Writing
- Teaching and Learning in Primary Mathematics
- Science Education in Primary Schools
- Methods of Teaching Islamic Education
- Teaching Writing and Speaking.
- Children's Literature and Literacy
- Teaching Social Studies in the Primary Classroom
- Teaching Measurement and Data Analysis in Primary Grades

Note: Specific course title examples are from a convenience sample of primary ITE programs across world regions.

When students develop foundational skills of literacy and numeracy in primary schools, they are set up for later success in schooling, the workforce, and life. These foundational skills are best developed through language arts and mathematics subject matter. Therefore, ITE programs for primary school teachers tend to have a significant focus on evidence-based teaching strategies for those subject areas. Box 4.4 provides examples of the types of courses on pedagogical knowledge for foundational literacy and numeracy found in primary school ITE programs across the world.

Box 4.4

A Spotlight on Foundational Literacy and Numeracy

It is essential that prospective primary school teachers have solid literacy and numeracy skills and are up to date in their knowledge of evidence-based approaches to teaching language arts (listening, speaking, reading, and writing) and mathematics (table B4.4.1).

Table B4.4.1 Core Topics for Primary School ITE

Language Arts	Mathematics	General
Foundations of reading pedagogy	Foundations of teaching • Numbers and operations	Basic student assessment
Application of research-based instructional practices at word and text levels	• Algebra • Geometry • Measurement • Data	Differentiated instruction
Integration of reading and writing		Selective use of materials and resources including technology

Source: Adapted from Zuilkowski et al. 2021.

Note: ITE = initial teacher education.

Contextualizing Pedagogical Knowledge

In developing both general and subject-specific pedagogical knowledge, it is crucial to incorporate the contextual realities of local schools and classrooms. Teacher preparation should include an understanding of teaching in multilingual settings (where applicable), the availability of teaching and learning materials, local norms for parental and community engagement, and the structure and content of the local primary school curriculum. Familiarity with curriculum materials is also important to ensure that new teachers are well prepared for the environment in which they will work.

To ensure that ITE programs remain relevant, their content should be closely aligned with the school curriculum that graduates will be expected to teach. Regular updates to ITE program content are necessary to reflect changes in curriculum and evolving local educational needs (see, for example, Case Study 1 on Bahrain).

Depending on the local context, ITE programs may also need to address specific challenges, such as teaching very large class sizes or managing multiple grade levels within a single classroom. In many countries, teachers are expected to teach large groups of students: Surveys across schools in Chad, Ethiopia, Sierra Leone, and some states in Nigeria and Pakistan, for instance, found cases of classes of around 100 students (Micheni, Bouvier, and Gregory, forthcoming). Despite this reality, teachers typically do not receive specialized training for teaching such large classes. A study of 11 Sub-Saharan African countries found that, although teachers were introduced to participatory teaching methods, they were not taught how to implement these approaches effectively in large classes, nor was it clear whether such implementation was feasible (Nordstrum 2015).

Creating Positive and Inclusive Learning Environments

From the very beginning of their teaching careers, new teachers must be equipped with the skills to create positive and inclusive learning environments. This involves fostering productive interactions among students, supporting their social and emotional development, effectively managing the classroom, and addressing the diverse needs of all learners (Larson et al. 2020; Schweig, Hamilton, and Baker 2019). When teachers establish such environments, they can maximize learning time and significantly enhance both the academic achievement and well-being of each of their students (Richardson et al. 2023). Box 4.5 provides examples of courses focused on creating positive and inclusive learning environments that are included in primary school ITE programs around the world.

Primary school classes include children with a wide range of prior achievements, learning and development needs, backgrounds, and interests. Newly graduated teachers often express concerns about managing student behavior and differentiating instruction to address this diversity. ITE programs should prepare teachers to meet these challenges, whereas induction programs can provide ongoing support as new teachers begin their careers. Box 4.6 provides further details on incorporating inclusive education principles and practices in ITE programs.

Box 4.5**Courses on Creating Positive and Inclusive Learning Environments in ITE Programs**

These courses focus on helping future teachers develop classrooms that are inclusive, engaging, and culturally responsive. They provide strategies for meeting the needs of diverse learners, incorporating cultural contexts into teaching, and fostering positive learning environments.

Examples of courses from initial teacher education (ITE) programs around the world that help develop teachers' knowledge and skills for creating positive and diverse learning environments include the following:

- Creating Positive Learning Environments
- Classroom Management Strategies
- Building Effective Learning Communities
- Cultivating Supportive and Dynamic Classrooms
- Classroom Environment and Learner Support
- Designing and Managing Learning Environments
- Character and Citizenship Education in the National Context
- Health, Safety, and Nutrition for Children
- Including Children with Special Educational Needs
- Managing Diversity in the Social Studies Classroom
- Classroom Environment and Learner Support
- Effective Inclusive Education Practices
- Interculturality and Education
- Introduction to Inclusive Education
- Support Measures for Pupils with Special Educational Needs in School
- Nurturing Inclusive and Supportive Learning Spaces.

Note: Specific course title examples are from a convenience sample of primary ITE programs across world regions.

Box 4.6**Incorporating Inclusive Education in ITE Programs**

Inclusive education is a critical component of teaching, yet it is often insufficiently addressed in many initial teacher education (ITE) curricula. A 2013 analysis found that the core curricula of ITE programs in many countries did not comprehensively cover inclusive education (Kaplan and Lewis 2013). More recently, the 2020 *Global Education Monitoring Report* noted that inclusive education, when it is provided, often focuses primarily on addressing the challenges faced by different learners (UNESCO 2020). If not approached carefully, this focus can unintentionally emphasize differences among students and reinforce divisions, thereby creating barriers to inclusion (Florian 2012).

Although it is important to address the additional support needs of some students, concentrating solely on individual differences can be problematic. For example, if classroom activities are differentiated to such an extent that some students are unable to participate with their peers, this can lead to marginalization. Inclusive pedagogy offers an alternative approach: it recognizes individual differences but seeks to avoid the marginalization that can occur when teaching strategies are designed only for specific needs (Florian and Beaton 2017). Instead, inclusive pedagogical approaches are designed to benefit all students.

Research indicates that a strong focus on inclusion within ITE programs can positively influence teachers' attitudes toward inclusion and enhance their ability to create inclusive classrooms. However, such positive impacts are not consistently observed across all countries (see, for example, Main, Chambers, and Sarah 2016; Miesera and Gebhardt 2018). This underscores the importance of grounding ITE programs in inclusive approaches and ensuring that student teachers gain experience with children with diverse learning needs during their field placements.

Because inclusive teaching practices are often missing from ITE curricula, they are frequently addressed in continuous professional development (CPD) programs instead. Teachers regularly express the need for more comprehensive and effective CPD on inclusive education, highlighting the ongoing demand for resources and training to support inclusive practices (Gregory and Singal, forthcoming).

Bridging Theory and Practice in ITE Programs

In addition to developing both a conceptual understanding of subject matter and pedagogical knowledge, ITE programs foster an ability to apply these in classroom settings (Darling-Hammond and Bransford 2005; Darling-Hammond et al. 2022). When ITE content explicitly connects the science of learning to practical teaching strategies, student teachers are better positioned to translate theory into effective practice.

Programs that rely solely on field placements often leave the connection between theory and practice to chance. In contrast, ITE programs that purposefully connect theoretical knowledge to practical application throughout the curriculum enable student teachers to navigate the complexities of lesson planning, classroom management, and explicit instruction with greater confidence and skill (Boyd et al. 2009; Darling-Hammond 2006).

Practice-based pedagogies play a central role in this integration. By observing, analyzing, discussing, and approximating teaching practices through their coursework, student teachers gain opportunities to internalize and refine effective instructional techniques (Ball and Forzani 2009). Microteaching, for example, provides a scaled-down teaching experience that focuses on specific teaching skills within a controlled environment, reducing the complexity of regular teaching (Allen and Eve 1968). Similarly, lesson study involves analyzing and discussing observations or video recordings of lessons to better understand teachers' instructional decisions (Stigler and Hiebert 1999). Another approach can be to include capstone experiences in ITE programs that purposefully integrate theory and practice, enabling student teachers to consolidate their learning (Boyd et al. 2009).

Teacher Professional Identity

From the outset of their careers, new teachers are expected to act with a clear sense of social and moral purpose, consistently demonstrating professional behavior and a commitment to enhancing children's learning and well-being. ITE programs play a key role in shaping this professional identity by embedding opportunities for student teachers to internalize ethical considerations, professional norms, and the value of collaboration with colleagues, families, and the wider education community.

Developing a strong professional identity involves more than acquiring knowledge and skills; it requires student teachers to understand and

embrace the responsibilities and expectations associated with the teaching profession. ITE programs can support this process by integrating coursework and experiences that highlight the ethical dimensions of teaching, the standards of professional conduct, and the importance of working collaboratively within the school and beyond. Box 4.7 lists examples of courses from primary school ITE programs around the world that are designed to foster the development of teachers' professional identity.

Teaching Methods in ITE Programs

ITE programs typically employ a range of teaching methods, including lectures, tutorial discussions, hands-on projects, group activities, role play, interactive digital technologies, self-reflection, field placements, and action research. The selection of these teaching methods should be guided by the overall instructional goals—such as building student teachers' content knowledge, developing practical skills, or meeting program completion requirements. Additionally, it is important to consider the diverse backgrounds and needs of student teachers when choosing appropriate pedagogies.

Box 4.7

Courses on Teacher Professional Identity in ITE Programs

These courses focus on developing teachers' professional identity, ethics, and understanding of their role. Examples of courses that foster professional identity in initial teacher education (ITE) programs around the world include the following:

- Introduction to Teaching
- The Teaching Profession
- Being a Professional Teacher
- Teacher as Leader: The Professional Role
- Education Management and Leadership
- Becoming a Teacher
- Philosophy of Education

Note: Specific course title examples are from a convenience sample of primary ITE programs across world regions.

Providing ample opportunities for hands-on, deliberate practice is essential in ITE programs. Practice-based pedagogies allow student teachers to develop both conceptual and practical understanding of effective teaching through activities such as observations, analysis, discussion, and approximations of practice (Ball and Forzani 2009; Darling-Hammond 2006; Grossman, Hammerness, and McDonald 2009). These approaches are effective because they help make the complexities of teaching more manageable for novices, reducing cognitive load as they learn to teach (Mancenido et al. 2025).

Implementing a consistent instructional model across ITE programs can further ensure that teachers are well prepared (Boyd et al. 2009; Darling-Hammond 2006; Hammerness 2006). Currently, many programs exhibit a fragmented approach, with different instructional models used across courses. This fragmentation can make it difficult for student teachers to connect concepts across their courses. Adopting a unified instructional model that emphasizes active learning and interactive engagement—eliciting and responding to student thinking—can help develop the “learning to learn” mindset and higher-order thinking skills necessary for effective teaching.

More broadly, ITE programs should cultivate a curious and inquisitive mindset among student teachers that they take forward into their careers, encouraging ownership of learning by identifying their needs and seeking answers (Darling-Hammond and Bransford 2005; Darling-Hammond et al. 2022). Prospective teachers must “learn how to learn” and develop scientific thinking skills that enable them to observe the realities and diversity of their classrooms, seek evidence-based resources, experiment with new approaches, and evaluate their own practice (box 4.9).

Digital Technology Support for ITE Programs

Digital technologies such as audio, video, and web resources; computers; and smartphones are now commonly used in ITE programs. The use of preloaded devices containing educational content has proven useful in overcoming infrastructure challenges such as limited connectivity and high data costs. However, the quality of that content remains the most important consideration—as well as a persistent challenge, especially considering the lack of established standards for designing, developing, testing, and implementing digital educational content for teaching and learning at any level (Koomar et al., forthcoming).

There are additional considerations when the technology involves artificial intelligence (AI). For example, in a recent study in Sierra Leone, 469 student teachers used a WhatsApp-based AI chatbot far more frequently than web search for teaching assistance in low-connectivity regions, benefiting from significant data-related cost efficiencies. However, only 2 percent of the AI-based digital content was drawn from local languages, cultures, and nuances of being (Björkegren et al. 2025). This finding highlights the need for adaptable, localized program designs that can accommodate technologies that are most accessible and prevalent in different contexts and incorporate content that reflects local knowledge and attributes.

Developing technology proficiency for teaching and learning is an essential component of pedagogical knowledge that student teachers must acquire alongside general digital skills. This includes not only basic digital literacy but also digital pedagogical competencies that enable teachers to integrate digital and AI tools across subjects, as well as more advanced skills for teaching about digital and AI technologies themselves, as discussed in box 4.8. Building these capacities allows teachers to foster digital skills in their students—preparing them for further education, future employment opportunities, and participation in society as responsible digital citizens.

Equipping student teachers in ITE programs with the ability to understand and develop judgment around the strengths and limitations of technology use for learning, as well as the ability to use, test, and adapt to emerging and advanced technologies, can enhance both their learning experiences and those of their future students. Therefore, it is essential for ITE programs to offer courses that strengthen student teachers' digital skills and provide a solid foundation for engaging with emerging technologies.

Box 4.8

Opportunities to Improve Teacher Preparation and Reduce Teacher Workload with AI

There has been a rapid increase in research exploring how artificial intelligence (AI) can be used in education (Tan, Cheng, and Ling 2025; Wang et al. 2024). However, few large-scale, rigorous evaluations have examined the impact of AI on student learning, and the available evidence is mixed. More research is needed to understand the contexts in which AI can effectively improve learning outcomes.

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Box 4.8**Opportunities to Improve Teacher Preparation and Reduce Teacher Workload with AI (*continued*)**

For example, Vanzo, Chowdhury, and Sachan (2024) conducted a study in which Italian secondary school students learning English as a second language participated in interactive homework sessions with Generative Pre-trained Transformer 4 (GPT-4). The results showed significant improvements in language skills—particularly grammar—and increased student engagement. In contrast, Bastani et al. (2024) studied Turkish secondary school students who used GPT-4-powered tutors during in-class mathematics sessions. Although these students performed better on practice problems, their scores on the final examination were lower.

This emerging evidence highlights what Dell’Acqua et al. (2023) describe as AI’s “jagged technological frontier”: AI can do some tasks well and others poorly, even when the tasks appear similar. As a result, many research experts recommend “considered, limited experimentation [of AI in education] without making undue pedagogical or financial commitments” (Klopfer et al. 2024). They also emphasize that such experimentation should build on the existing knowledge base of how students learn most effectively (Riley and Bruno 2024).

One promising area for AI investment is in tools that enhance teacher preparation and reduce teacher workload. For instance, AI-powered simulated environments have helped initial teacher education (ITE) students practice and develop teaching skills, providing automated, immediate feedback to support improvement (Copur-Gencturk, Li, and Atabas 2024; Demszky et al. 2024). Additionally, exploratory research in Ghana has identified the potential of AI in enhancing student teachers’ content knowledge and access to learning and teaching resources (Nyaaba et al. 2024). AI has also been shown to help teachers speed up the development of lesson plans tailored to the specific learning needs of their students and classroom contexts (Benton 2025; Roy et al. 2024). However, these initiatives underscore the importance of supporting teachers to ensure that AI-generated outputs are of high quality and that AI is used safely and effectively. For example, the UK government has invested significantly in Oak National Academy’s AI assistant, Aila, to ensure that any lesson planning outputs are aligned with the research on how students learn best and the Academy’s already developed corpus of high-quality instructional materials (Clark et al. 2025).

Finally, the potential for AI to accelerate learning outcomes depends on widespread and equitable access to digital technologies and affordable,

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Box 4.8**Opportunities to Improve Teacher Preparation and Reduce Teacher Workload with AI (*continued*)**

high-quality internet connectivity. The experience of the One Laptop per Child program, which distributed millions of laptops to some of the world's poorest and most isolated regions in the early 2000s, is instructive. Two randomized controlled trials (Beuermann et al. 2015; Cristia et al. 2017) and a long-term follow-up (Cueto et al. 2024) in rural Peru found only small effects on personal computer use and no improvements in student learning. In contrast, Lakdawala, Nakasone, and Kho (2023) found that rural Peruvian schools that gained internet access during the same period saw improvements in grade 2 test scores, with gains accumulated as schools adopted new internet-connected technologies to support student learning. Without connectivity, there are real limits to the potential of AI in ITE.

Selecting and Developing Teacher Educators

Teacher educators occupy a central role in ITE. They are responsible for delivering ITE courses and for shaping, challenging, or building upon the knowledge and perspectives that student teachers bring to ITE. To be effective, teacher educators need substantial teaching experience, a deep conceptual understanding of education and child development, and an up-to-date awareness of the latest research in education.

Despite the importance of this role, many teacher educators in various contexts may lack sufficient subject matter and pedagogical knowledge (Muzaffar, Rahim, and Jessee 2011; Zuilkowski et al. 2021). For example, research in Cambodia found that some teacher educators had lower mathematics subject matter knowledge than grade 9 students (Tandon and Fukao 2015). In some settings, ITE programs are under increasing pressure to hire teacher educators with advanced degrees. However, if these appointments are based purely on academic qualification rather than classroom experience or demonstrated teaching skill, some teacher educators may not be well equipped to make their teaching relevant to the classroom realities that future teachers will face.

The situation in Ethiopia illustrates this challenge. Although many teacher educators hold advanced degrees, the majority of those involved in developing and implementing new course modules on early literacy had

not been trained in literacy pedagogy or theory, nor had most received training to teach early-grade literacy (Mekonnen et al. 2018). Even when teacher educators have adequate knowledge and substantial experience teaching in schools, they may have taught using outdated curricula or pedagogies, or they may not be aware of new evidence and guidance for effective teaching.

Although research on professional development for teacher educators in low- and middle-income countries is limited, available evidence suggests that targeted training can improve teacher educators' knowledge. In some cases, such training has also led to gains in student teacher knowledge (Zuilkowski et al. 2021). Professional development is most effective when it takes into account teacher educators' existing background knowledge and provides opportunities for them to apply new strategies in practice. Encouraging teacher educators to reflect on the implementation of research-based practices and their impact on student learning also appears promising for improving their instructional practices while simultaneously modeling self-reflection for student teachers. Engaging expert teacher educators to provide professional development to their peers can be a valuable strategy (Mekonnen et al. 2018). In addition, organizing school visits for teacher educators can help ensure they remain familiar with current school practices and realities, further bridging the gap between theory and practice.

Upskilling teacher educators has been a central component of Zambia's ITE reform, with a particular emphasis on foundational literacy. Case Study 2 on Zambia highlights several key lessons, such as the importance of engaging all teacher educators directly to foster buy-in and minimize resistance; the need for education authorities to play an active role in maintaining the curricular quality of ITE programs; and the value of closely aligning ITE with current practices and needs in schools.

In Ghana, ITE reforms included raising the minimum qualification for teacher educators to the master's degree level and formalizing their professional development. To support this, bespoke postgraduate programs—such as MPhil and PhD tracks—were developed to upskill teacher educators and ensure that they meet the minimum qualification requirements in ways that are highly relevant to their roles. These reforms promoted a collaborative environment aimed at improving instructional practices and strengthening teacher educators' capacity to model effective pedagogy for student teachers. In addition, policy dialogue was initiated on equitable deployment and retention strategies to reduce the loss of experienced teacher educators (Case Study 4).

Complementary ITE Strategies, Catch-Up, and Continuing Learning

In complementary ITE strategies, such as fast-track or school-based models, it may be more difficult to provide the core knowledge and skills for teaching, given that the quality of practice in schools often varies widely. In low-resourced environments or where there are crises or high demand for teachers, and where ITE is offered at a lower education level, this may be a particular concern. In these situations, it is important to focus on core content and reduce the number of key learning objectives for the student teachers.

In addition, ITE programs cannot provide all the skills and competencies that new teachers need. Hence, their learning should continue through a well-designed induction program (chapter 6) and with continuous professional development (CPD) throughout their careers, especially as new curricula, technologies, and pedagogical evidence arise (box 4.9).

Box 4.9

Considerations for Continuing Learning Through Professional Development Programs

Although questions have been raised about the effectiveness and value of continuous professional development (CPD) in low- and middle-income countries, a significant body of research has demonstrated its impact on pupil outcomes across the world, even for pupils of already experienced teachers (Lynch et al. 2019; Popova et al. 2022; Yoon et al. 2007). One question these studies have sought to answer has been: What types of professional development are more or less effective in improving pupil outcomes?

Syntheses of the most recent rigorous research show that programs do not necessarily have to be extended or delivered in school to have an impact. Programs of varying lengths and formats can produce wide-ranging effects; what matters more is *how* the time is used (Hill, Papay, and Schwartz 2022; Sims et al. 2021).

One area of growing evidence is that professional development programs have been more effective when they are “focused on improving teachers’ content knowledge, pedagogical content knowledge, and/or understanding of how students learn” (Lynch et al. 2019, 277) and when they have “a specific subject focus,” including a

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Box 4.9**Considerations for Continuing Learning Through Professional Development Programs (*continued*)**

focus on subject content (Popova et al. 2022). For example, one such highly effective professional development program in Uganda trained teachers in how to learn like scientists—posing sharp questions, framing specific hypotheses, and using evidence and data gathered from everyday life whenever possible—and raised the pass rate in the national primary school leaving examination from 51 percent to 75 percent (Nourani, Ashraf, and Banerjee 2025). This CPD program developed teachers' core knowledge about how pupils learn as well as their own skills in delivering lessons aligned to the science of learning (see, for example, Bransford, Brown, and Cocking 2000; Darling-Hammond et al. 2022).

Recent research also shows that core skills and knowledge for teaching can enhance the effectiveness of other educational interventions. For example, instructional coaching, which has a robust evidence base (Kraft, Blazar, and Hogan 2018), is less effective when teachers lack a core knowledge of the instructional methods being focused upon (Cohen et al. 2023). Similarly, whether or not teachers use high-quality instructional materials, which have been shown to improve student outcomes (Fleisch et al. 2016; Meiring 2021), is influenced by teachers' core beliefs about the subject matter being taught and how students best learn (Collopy 2003; Cronin-Jones 1991; Roehrig and Kruse 2010).

In emergency contexts or where capacity is very low, a sequenced, level-appropriate curriculum—prioritizing essential competencies for emergency credentialing—can meet immediate needs, enabling scaling-up as the system develops. The Inter-agency Network for Education in Emergencies has published “Training for Primary School Teachers in Crisis Contexts,” which provides ways in which to support the development of unqualified or underqualified teachers often recruited to teach in refugee camps and a range of other emergency settings (INEE 2016).

Ideally, ITE equips all teachers with the core skills and knowledge necessary to be effective from their first day in the classroom. However, in many low- and lower-middle-income countries, there are groups of teachers who have not had the opportunity to acquire these core knowledge and skills for teaching through formal ITE programs. Instead, these teachers often learn on the job, frequently working in isolation and with limited or no access to research on the science of learning or evidence-based teaching strategies.

In some countries, experienced teachers who have not completed ITE are asked or required to undertake training and obtain a teaching qualification. For example, such policies have been implemented in Viet Nam (Case Study 3). When introducing these requirements, it is important to consider the needs of teachers, particularly regarding the time and compensation necessary to complete in-depth training programs. Recognizing prior learning is also essential; for instance, models such as France’s *Dispositifs Académiques de Validation des Acquis* (Academic Devices for Validation of Acquired Skills)—which inspired Madagascar’s initiative to professionalize primary school leadership (box 4.10)—can serve as valuable references.

Box 4.10

Using Recognition of Prior Learning to Professionalize Primary School Leadership in Madagascar

Until recently, Madagascar lacked standardized recruitment procedures, initial training programs, and certification frameworks for primary school directors. Most public primary school directors had served in their leadership roles for an average of 13 years while also teaching, and 73 percent held only secondary education—the minimum qualification required to teach in primary schools (UNICEF and Madagascar MEN 2023). To improve the quality of primary education, the Ministry of National Education (MEN), with support from the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Bank, launched a national reform. This included the development of a national competency framework and the introduction of the Certificate of Aptitude for School Leadership, which became the required credential for school leaders starting in 2024.

Building on Madagascar’s previous experience with Recognition of Prior Learning (RPL) pathways in other fields such as technical and vocational education and training (TVET), the reform introduced several initiatives to support teacher leaders. These included candidate guidance, portfolio development, mentoring, in-school assessment, and evaluation by an independent commission. The RPL pathway program was piloted in 2024, with a phased national rollout planned between 2026 and 2029.

The RPL pathway is more than a procedural change; it represents a significant step toward equity and systemic improvement. It recognizes the expertise of experienced school leaders who have long worked

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Box 4.10**Using Recognition of Prior Learning to Professionalize Primary School Leadership in Madagascar (*continued*)**

without formal recognition and provides a flexible, competency-based route to certification. Moreover, candidates are active participants in the process, responsible for documenting, analyzing, and reflecting on their professional practice in alignment with national standards.

UNESCO's work in Madagascar is part of a broader effort to help countries design and implement operational RPL systems. The Madagascar experience informed the development of an operational manual or “toolbox” and a set of practical guidelines—covering advocacy, design, launch, and implementation of effective RPL systems—that can be adapted to other contexts (UNESCO 2023).

Areas for Future Research: Remaining Evidence Gaps

The following areas for future research related to improving ITE program content represent notable gaps in the education evidence base (particularly in low- and middle-income country contexts) and warrant targeted investigation:

- *Which components of ITE curricula most strongly improve novice teachers' instructional practice and student learning?* These could include content on subject matter, general pedagogy, subject-specific pedagogy, classroom management, and assessment. How should these components be sequenced to enable efficient student teacher learning?
- *What is the optimal balance between strengthening ITE entrants' foundational literacy and numeracy and covering broader primary-subject content—especially when entrants begin with weak mastery?* Striking this balance could involve sequencing and dosage choices such as content-first remediation, integrated content-plus-pedagogy pathways, and making progression decisions based on diagnostic mastery.
- *Which teacher educator characteristics and practices best predict student teacher learning and practice outcomes?* Characteristics could include recent classroom experience, subject expertise, pedagogical skill, coaching ability, and advanced degrees, while practices could include modeling lessons, reflective practice, collaborative learning, mentoring and coaching, and inquiry- and research-based approaches.

- *Which professional development models for teacher educators produce sustained changes in their instruction, and at what cost?* These could include peer-led communities of practice, coaching-of-coaches architectures, school immersions, and structured rehearsal.
- *What are reliable, low-burden ways to monitor ITE instructional quality and link monitoring to improvement?* These could include course artifacts, standardized observation rubrics adapted to microteaching and field placement, and structured performance tasks.
- *How can ITE programs use AI tools to improve teacher preparation while ensuring localization, safety, and avoidance of low-quality or culturally mismatched content?* The options could include AI-assisted lesson planning, classroom simulations, and feedback on practice tests, with content vetting pipelines, alignment to curricula and languages, and privacy safeguards.
- *For untrained or underqualified teachers, which catch-up program designs produce the best learning gains without excessive time and financial burdens?* These could include recognition of prior learning, modular credentialing, and blended delivery models.

Key Takeaways

This chapter has explored ITE curricula, including the content and teaching methods, along with the role of teacher educators, and the need for catch-up learning and continuing learning opportunities. Key takeaways include the following:

- *ITE programs should build student teachers' understanding of teaching and learning, alongside the practical skills needed to apply this knowledge.* Program content must reflect the realities of their future work—preparing student teachers to implement the school curriculum and equipping them, as relevant, with strategies for teaching large class sizes, multilingual or multicultural classes, and in low-resource environments. Ample opportunities for bridging theory and practice—such as microteaching, classroom observation, and lesson study—should be provided, with sufficient time for deliberate practice.
- *Primary school teachers need a strong command of the subject matter they will teach, extending beyond grade-level content.* ITE programs should prioritize the development of robust literacy and numeracy skills. Depending on the skill levels of incoming student teacher cohorts, programs may need to offer remedial content or allocate additional time to strengthen student teachers' foundational knowledge.

- *In addition to subject matter knowledge, ITE programs must equip student teachers with both general and subject-specific pedagogical knowledge.* This includes a solid understanding of child development, the science of learning, effective teaching methods, and assessment strategies.
- *Preparation in classroom management and inclusive teaching strategies is essential so that student teachers can create positive learning environments and engage all children.* By fostering such environments, teachers not only support academic achievement but also promote students' social and emotional development as an integral part of the learning process.
- *ITE programs can cultivate a strong sense of professional identity in future teachers by emphasizing ethical considerations; professional norms; and the importance of collaboration with colleagues, families, and the broader education community to enhance children's learning and well-being.*
- *The quality and effectiveness of ITE programs depend significantly on the capacity and expertise of teacher educators.* Ongoing professional development is essential to ensure that teacher educators are up-to-date with curriculum reforms, evidence-based pedagogical practices, and effective mentoring techniques.

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Incorporate quality **field placements** for teaching experience and practice

Design field placements to progressively develop student teachers' skills

- ▶ **Organize field placements** to gradually shift student teachers from observing to taking on teaching responsibilities.
- ▶ **Provide regular feedback** and opportunities for structured reflection.



Choose schools that provide the best learning opportunities for student teachers

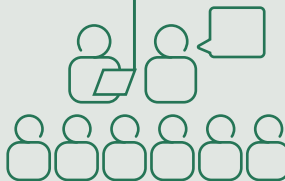
- ▶ **Assign student teachers to classrooms where they can observe effective teaching practices**, receive feedback, and experience the level and conditions of the classrooms they will eventually teach in.
- ▶ **Explore professional development schools, group placements**, peer mentoring, or institution-based practice as alternatives if ideal placement sites are not available.

Support capable teachers interested in mentoring

- ▶ **Identify and incentivize teachers** who can serve as mentors by modeling high-quality teaching and offering guidance to student teachers.
- ▶ **Offer guidance** and professional development opportunities to mentor teachers.

Ensure active involvement of ITE institutions in field placements

- ▶ **Integrate field placement experiences throughout** the ITE program.
- ▶ **Utilize ITE courses to prepare student teachers for field placements**, reinforce learning, and guide reflective practices.
- ▶ **Engage ITE institutions** in the training and support of mentor teachers and the supervision of student teachers.



5

Principle 3: Incorporate Quality Field Placements for Teaching Experience and Practice

KEY QUESTIONS FOR POLICY MAKERS

Structure and Scaffolding

- How are field placements structured? Do they allow for a gradual increase in responsibility, from observation to independent teaching?
- How is coherence ensured between coursework and field placement experiences?

Mentorship and School Partnerships

- How are placement schools and mentor teachers selected? What criteria are used?
- What training, incentives, and support are provided to mentor teachers?
- How do initial teacher education (ITE) institutions and placement schools collaborate on supervision and assessment of student teachers?

Introduction

Field placements are a critical feature of ITE programs, enabling student teachers to develop their teaching skills in real-world settings.¹ These experiences serve as a crucial bridge between theory and practice and are a key feature of ITE in high-performing education systems. As examples, Finland, the Republic of Korea, and Shanghai (China) all offer at least six months of field placements for prospective primary and secondary teachers over the course of the ITE program. This experience is built into the ITE

curriculum (Béteille and Evans 2021). Although field placements can take various forms, they typically involve practice teaching in actual schools under the supervision of a mentor teacher.²

The duration and structure of field placements vary widely: Student teachers may spend an extended period in a single school or participate in several shorter placements across different schools throughout their ITE program. Field placements usually combine opportunities for student teachers to observe experienced mentor teachers and to lead classes independently. This chapter examines the role of field placements in ITE, with a particular focus on ensuring their relevance and quality.

The Role of Field Placements in ITE

Field experience is a key dimension of high-quality ITE. It provides student teachers with essential exposure to the realities of teaching, allowing them to practice and apply educational concepts in a real and supportive classroom setting (Darling-Hammond 2014; Muzaffar, Rahim, and Jessee 2011). Through field placements, aspiring teachers develop both subject matter and pedagogical expertise, learn to create positive learning environments, and begin to form their professional identities as teachers. As such, field placements are a critical component of the ITE curriculum.

A well-structured field placement experience complements the conceptual learning from other parts of the ITE program. It supports the development of key competencies, including classroom management, socioemotional skills for interacting with children, pedagogical techniques, and subject matter knowledge (OECD 2019; Zuilkowski et al. 2021). Field placements offer student teachers the opportunity to observe and practice essential teaching processes that are difficult to fully grasp through ITE courses alone—such as lesson planning, student assessment, and adapting instruction to meet diverse student needs. Moreover, practical experience is especially important for adult learners because it helps them to unlearn outdated practices and acquire new skills. Field placements create these valuable learning opportunities, supporting the transition from theory to practice (Béteille and Evans 2021).

Research underscores the importance of field placement experience. Analysis of data from the Program for International Student Assessment (PISA) highlights its positive impact, and studies from Latin America indicate that students tend to achieve more when their teachers have participated in a field placement (World Bank 2019).

Facilitating Student Teachers' Learning Through Field Placements

To effectively build student teachers' teaching skills and professional identity, field placement experiences must be well-structured, highly supportive, and focused on the observation of high-quality teaching. They should also incorporate iterative cycles of practice and reflection, allowing student teachers to continuously improve their skills.

Field placements can also serve as a screening mechanism to ensure that future teachers are developing the necessary competencies for effective teaching. For example, in Burkina Faso, student teachers participate in a practical examination that is observed and evaluated in a classroom setting by a panel consisting of a primary school teacher, a teacher educator, and a pedagogical adviser. In addition to this practical assessment, student teachers receive a behavior grade and are required to produce a report reflecting on their field placement experience, including the lessons learned and challenges encountered. This report is evaluated by a jury at their ITE institution. All of these evaluations contribute to the student teachers' overall grade point average and play a significant role in determining whether they graduate from the ITE program (Case Study 9).

Structuring Field Placements to Scaffold Student Teachers' Development

An effective field placement is designed to gradually move student teachers from intensive support toward greater autonomy (World Bank 2019). During their placements, student teachers learn both by observing experienced mentor teachers and by practicing teaching themselves. In the early stages of the field placement, student teachers should spend more time observing and analyzing expert teachers modeling effective practice, allowing them to become familiar with classroom routines and effective teaching. As their skills and confidence grow, they gradually assume responsibility for planning and delivering lessons.

This progression is guided by mentor teachers, who play a crucial role in supporting student teachers through the transition. Early in the placement, mentor teachers provide active guidance and close supervision. Over time, they gradually shift responsibility to the student teachers, encouraging them to independently plan and teach lessons, make decisions about pedagogy and classroom management, and assess student learning (World Bank 2019; Zuilkowski et al. 2021).

However, in many contexts, field placements are not structured in this way. Instead, student teachers are often subjected to a “sink or swim” approach, where they are given too much responsibility and too little mentorship. This lack of support may hinder the development and practice of effective teaching strategies (Schwille and Dembélé 2007). When student teachers are left alone in the classroom without adequate supervision or guidance from their mentor teachers, the field placement offers little benefit for their pedagogical growth or for student learning. An example of a reform in ITE field placements that incorporates the gradual release approach is provided in box 5.1.

Selecting and Supporting Strong Mentor Teachers

Engaged and capable mentor teachers who model effective teaching practice are essential for the learning and development of student teachers.

Mentor teachers play a critical role by modeling good practice, providing

Box 5.1

Building Student Teacher Responsibility Through Field Placement Experience in the West Bank and Gaza

As part of the World Bank-supported Teacher Education Improvement Project in the West Bank and Gaza (2010–19), the field placement process underwent significant reform. The duration of field placements was extended, and portfolios were introduced as a tool to evaluate student teachers’ work during their placements. Comprehensive handbooks were developed to guide both portfolio development and the mentoring process. In addition, the pedagogical capacity of all stakeholders—including school principals, mentor teachers, and university staff—was strengthened.

A new field placement model was introduced, beginning in the second year of initial teacher education (ITE) and continuing through the fourth year. Student teachers started with one or two days per week in school placements, gradually increasing their involvement. By their final year, they assumed full responsibility for teaching during a five-week block period. Alongside the school-based experiences, university-led field placement courses provided opportunities for student teachers to prepare for their placements, discuss their experiences, share insights, and receive feedback (Burke et al. 2020). This approach, which emphasizes the progressive increase in teaching responsibilities, demonstrates how field placements can be structured to help student teachers gradually take on more responsibility and develop their professional skills.

support, and creating meaningful classroom learning opportunities for student teachers.

Research from the United States shows that teachers tend to have higher initial observation ratings and higher student value-added scores when their mentor teachers during field placements also had strong ratings and value-added scores (Bastian, Patterson, and Carpenter 2020; Goldhaber, Krieg, and Theobald 2020; Ronfeldt, Brockman, and Campbell 2018; Ronfeldt et al. 2021). Furthermore, the frequency and quality of mentoring, as well as the quality of teaching modeled, have a substantial impact on student teacher learning (Darling-Hammond 2014). Teachers who attended ITE programs with closer oversight during field placements also demonstrate higher value added (Boyd et al. 2009).

Because strong mentor teachers are so important, inadequate preparation and support for mentor teachers can undermine the quality of the field practice experience, leaving student teachers without the guidance they need (World Bank 2019). To address this shortcoming, mentor teachers themselves may require guidance and professional development to enhance their mentoring skills (Lewin 2004). Emerging evidence suggests that training mentor teachers in strategies such as providing effective feedback and fostering reflective practice can help strengthen student teachers' skills (Becker, Waldis, and Staub 2019).

Recruiting effective mentor teachers is a key first step. Although more research is needed on the most effective recruitment and selection strategies, education systems might consider offering incentives (such as stipends) or making mentorship a requirement for promotion eligibility. In addition, the professional development opportunities and exposure to new education research that come with being a mentor teacher can be attractive to some teachers (see NAU, n.d.). However, these incentives alone may not be sufficient to recruit enough capable mentor teachers, particularly in low-resource settings.

Providing Feedback and Enabling Reflection

Regular feedback fosters student teacher learning. The field placement experience is a critical time for student teachers to develop strong teaching practices and professional identities. Supporting and investing in student teachers during this period is crucial for encouraging effective teacher practices throughout their careers. Both school-based mentor teachers and teacher educators from ITE institutions share responsibility for supporting student teachers (Muzaffar, Rahim, and Jessee 2011). Mentor teachers, in particular, play a key role by providing consistent feedback. Research in the United States has shown that student teachers feel more prepared when

paired with mentor teachers who offer frequent and strong support (Matsko et al. 2020; Ronfeldt, Reininger, and Kwok 2013).

In addition to ongoing feedback during field placements, opportunities for student teachers to reflect on their teaching are vital for their learning (Darling-Hammond 2014; World Bank 2019). Reflection is a valuable tool for improving teaching practice. Developing strong reflective capacities during ITE helps teachers integrate these practices into their teaching more automatically when they are in service.³ Reflection can be encouraged in various ways, such as by posing questions about what a teacher may have overlooked in a particular moment or through structured reflection processes focused on specific lessons. Self-assessment activities—such as journaling, action research, or other reflective exercises—also support student teacher learning (Muzaffar, Rahim, and Jessee 2011).

A study at a university in Germany found that microteaching, followed by systematic reflection on those experiences, enhances student teachers' self-efficacy for reflection (Hußner et al. 2023). Teacher educators and mentor teachers play an important role in guiding student teachers to reflect intentionally and practically on their teaching during the field placements. This guidance helps student teachers strengthen their teaching skills and develop key reflective practices that will benefit them throughout their careers.

Finding Placements that Reflect Student Teachers' Future Work

Field placements are only as valuable as the quality of teaching to which candidates are exposed. To effectively prepare student teachers for their future roles, placement schools must both demonstrate good practice and reflect the conditions teachers will eventually encounter. Factors to consider include the level, subject, class size, available resources, and the presence of multigrade classes (Bashir et al. 2018; Darling-Hammond 2014). Studies from the United States indicate that teachers achieve higher value-added scores when the student demographics of their first year of teaching match those of their field placement or when they teach a grade level similar to that of their field placement (Boyd et al. 2009; Goldhaber, Krieg, and Theobald 2017; Henry et al. 2013; Krieg, Goldhaber, and Theobald 2022).

Finding placements that both reflect these realities and showcase good practice under the guidance of dedicated mentor teachers can be challenging. In some contexts, teacher training schools or professional development schools (including primary schools) serve as sites for student teacher learning. These schools maintain strong links to ITE programs,

with university staff supporting curriculum development and other school improvement activities alongside schoolteachers. Teachers in such schools are well equipped to model effective practice and mentor student teachers. (See Darling-Hammond 2017 for a discussion of teacher training schools in Finland and School Centres for Teaching Excellence in Australia.)

Although this model school approach is less common in low-income contexts, it may be a useful strategy for settings in which student teachers may not otherwise be exposed to strong teaching practice, provided such professional development schools are accessible for field placements. Professional development schools in marginalized or underserved areas may also help to improve learning outcomes and school quality over time, in addition to creating higher-quality learning opportunities for student teachers (Darling-Hammond 2014).

Ensuring Coherence Across the Field Placement and Full ITE Program

Instructional coherence between the field placement and the rest of the ITE curriculum is essential for a strong field placement experience. A study of seven strong ITE programs in the United States found that a shared feature was a common and clear vision of good teaching across both the ITE courses and the field experiences (Darling-Hammond 2014).

Together, ITE courses and field placements aim to prepare student teachers for the realities they will face in their classrooms. ITE courses can introduce candidates to the curriculum and pedagogies they will use in their placement schools as well as to the challenges they may encounter—not only in their future teaching careers but also during their field placements. This content includes exposure to pedagogies modeled by mentor teachers (Zuilkowski et al. 2021) and strategies for teaching in large, multigrade, or underresourced classes. Coherence between ITE courses and field placements, built around a shared vision of effective teaching in context, can help facilitate strong field placements and better equip student teachers for their future work.

Field placements that are integrated throughout the ITE program, rather than scheduled only at the end, help student teachers better combine theory and practice. In many systems, field placements occur after students have completed most of their courses, offering limited opportunities to practice and apply the strategies and knowledge acquired in their courses (Bashir et al. 2018; Lewin 2004). Evidence suggests that student teachers learn more effectively and are better able to develop the skills and strategies presented in their courses when they have opportunities to practice

them concurrently. The frequency with which teacher candidates can apply the pedagogies learned in their ITE courses to classroom teaching is a predictor of pedagogical content knowledge in some settings (World Bank 2019). In the United States, field placement opportunities that run alongside courses have been found to be effective, allowing student teachers to apply their learning on specific teaching practices as they progress through their studies (Darling-Hammond 2014).

Spending more time in field placements provides student teachers with greater opportunities for learning and skill development, but the quality of mentorship is crucial. A longer, low-quality program may offer few benefits, and the quality of the field experience has a greater impact than its duration (OECD 2019; World Bank 2019). Although there is no definitive evidence on the ideal length of field placements, longer experiences are generally considered more beneficial because they allow student teachers to practice and improve based on their learning and experiences. Extended placements (six months or more) are a feature of several high-performing systems, whereas short placements limit student teachers' ability to build autonomy or form relationships with students (Darling-Hammond 2014; Lewin 2004; World Bank 2019). Therefore, introductory field visits are not a substitute for extended teaching practice.

Considerations for Low-Resource Contexts

Where logistical or capacity constraints limit access to placement schools that would expose student teachers to effective practice, field placements may take on different forms. Placing student teachers in pairs or small groups is one strategy to consider when systems face shortages of experienced mentor teachers. Although evidence remains limited, two experimental studies from the United States found that students in small-group field placements reported better support, used more effective practices, and demonstrated stronger pedagogical reasoning (Bowman and McCormick 2000; Bullough et al. 2003). Correlational studies in Cyprus and Viet Nam found that English as a foreign language teachers who experienced peer mentoring during field placements reported higher self-efficacy and improved teaching practice (Goker 2006; Nguyen and Baldauf 2010).

When schools are far away or when the quality of practice in schools is insufficient, ITE programs may include microteaching as a way to build student teachers' pedagogical skills. Microteaching is a strategy used in some ITE programs (during program courses) to help teacher candidates practice specific teaching skills, usually by teaching lessons to peers at their ITE

institution and receiving feedback from peers and teacher educators. In some settings, this also involves a lesson planning process in preparation for teaching.

Research from two teacher colleges in Bhutan suggests that microteaching helped boost student teachers' confidence, classroom language use, and specific teaching skills such as introducing a lesson (Wangchuk 2019). Research from a teacher college in Indonesia found that students reported microteaching increased their confidence, strengthened their communication skills and teaching approaches, and helped build some pedagogical skills before a field placement (Zulfikar et al. 2020). However, many students did not feel that microteaching helped them develop classroom management skills or lesson planning abilities. This study specifically examined how microteaching can prepare student teachers for field placement, which takes place after the microteaching class, and ultimately highlights the value of including both microteaching and field placements in the ITE curriculum. Given the benefits that microteaching can offer for developing certain teaching skills—albeit with limitations—expanded attention to microteaching may be an option to consider where high-quality field placements are not available.

Areas for Future Research: Remaining Evidence Gaps

The following areas for future research related to quality field placements represent notable gaps in the education evidence base (particularly in low- and middle-income country contexts) and warrant targeted investigation.

- *What field placement structures most improve novice teacher effectiveness, and what is the minimum dose of classroom experience needed?* These structures could include early observational visits followed by later block placements versus fewer long blocks, with attention to total hours, continuity, incremental responsibility, and supervision intensity.
- *Which scaffolding models best prevent negative “sink-or-swim” experiences, and how should increases in responsibility be paced?* The models could include observation, coteaching, supervised teaching, and independent teaching, with staged responsibility and clear performance thresholds.
- *Which observable mentor teacher and school characteristics best predict student-teacher growth, and how feasible is it to select mentor teachers and schools using those criteria in low-capacity systems?* The criteria could include instructional practice measures, years of experience, subject expertise,

and socioemotional skills, along with operational feasibility assessments for mentor selection.

- *What incentives increase the supply of strong school-based mentors, and how do incentives affect mentor effort and quality?* These could include stipends, reduced teaching loads, professional recognition, and promotion eligibility, with analyses of effort responses, selection effects, and quality assurance.
- *What mentor training content produces sustained improvements in mentoring, and does it translate into better novice teacher classroom practice?* This could include how to give actionable feedback, how to model core practices, and how to support reflective cycles, with tracking of persistence and transfer to novice instruction.
- *In systems with hard-to-staff schools, how can placements both reflect real constraints and avoid normalizing low-quality instruction?* Options could include criteria for site selection, additional supports for challenging placements, and safeguards to maintain instructional quality expectations.
- *When high-quality placements are scarce, which alternatives best substitute for or complement school-based practice in helping student teachers gain experience?* These could include group placements, peer mentoring, microteaching, and simulation or video-based practice.
- *How can ITE programs track student teacher development during field placements to ensure they are developing quality practice, and, when necessary, enabling early intervention and targeted supports?* The options could include targeted skills-focused observation frameworks, student teacher and mentor teacher feedback mechanisms, and check-in assessments of student teacher lesson resources.

Key Takeaways

This chapter has examined the role of field placements in ITE, and ways in which to ensure their relevance and quality. Key takeaways include the following:

- *Field placements play a crucial role in helping student teachers build their professional identities and develop core skills for teaching.* However, these experiences are only valuable if they provide high-quality practice opportunities that reflect the realities of the schools where student teachers will eventually work. Field placements are most effective when they are structured to allow student teachers to gradually

progress from observation to taking on teaching responsibilities and when they include regular feedback and opportunities for structured reflection.

- *The selection of placement schools significantly influences the learning opportunities available to student teachers.* Classrooms that demonstrate effective teaching practices, provide meaningful feedback, and mirror the conditions student teachers are likely to encounter in their careers offer the most benefit. In contexts where such placements are unavailable, alternatives such as professional development (or model) schools, group placements, peer mentoring, or institution-based practice (such as microteaching) have been used.
- *Strong mentor teachers are essential for an effective field placement experience because they must be able to model high-quality teaching, offer guidance, and provide constructive feedback to student teachers.* Identifying, incentivizing, and supporting capable teachers to take on mentoring roles, as well as providing them with professional development to strengthen their mentoring skills, enhances the quality of the field placement experience.
- *The active involvement of ITE institutions in field placements contributes to more coherent and effective learning experiences.* When field placements are integrated throughout the ITE program—and when courses prepare student teachers for placements, reinforce learning, and guide reflective practice—student teachers benefit. ITE institutions also play a key role in the training and support of mentor teachers and in the supervision of student teachers during placements.

Notes

1. Terminology varies across the world; other terms for field placement include practicum, clinical practice, internship, field experience, student teaching, and pre-service teaching.
2. Other terms for mentor teacher include cooperating teacher, supervising teacher, host teacher, master teacher, clinical teacher, guiding teacher, practicum supervisor, field instructor, and support teacher. A distinction is sometimes needed between the school-based mentor teacher and the ITE institution-based supervising teacher educator, both of whom may support the student teacher in the classroom.
3. See Weaver, Bertelsen, and Othman (2022) for a practical model of reflective practice.

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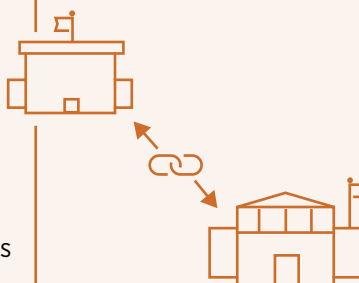
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Align institutions for responsive, efficient, and quality-driven ITE

Enable coordination across government departments, ITE institutions, and civil society

- ▶ **Facilitate effective communication and alignment** among government departments overseeing ITE and primary education.
- ▶ **Harmonize teacher workforce planning** with the enrollment strategies of ITE institutions, ensuring appropriate numbers of future teachers.
- ▶ **Engage ITE institutions and civil society in education reform efforts** such as ITE and primary school curricula updates and teacher policy development.



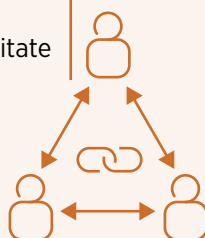
Promote collaboration across ITE institutions and schools

- ▶ **Foster collaborative partnerships between ITE institutions and field placement schools**, with shared responsibilities for mentorship, supervision, and learning.
- ▶ **Boost capacity by sharing expertise between ITE providers and schools** through collaboration in ITE content development, field placements, induction programs, and continuous professional development.



Encourage alignment and mutual learning across ITE, continuous professional development (CPD), and university research efforts

- ▶ **Ensure strong links between ITE institutions and CPD providers** to facilitate alignment on content and strategies.
- ▶ **Develop high-quality induction programs** to support new teachers after ITE.
- ▶ **Foster research partnerships between ITE institutions and universities** when they are separate entities.



6

Principle 4: Align Institutions for Responsive, Efficient, and Quality-Driven ITE

KEY QUESTIONS FOR POLICY MAKERS

Institutional Coordination and Governance

- What mechanisms exist for coordination between the ministry of education, higher education authorities, initial teacher education (ITE) institutions, and schools?
- How are teacher unions and civil society organizations involved in ITE policy dialogue and reform?
- How is the ITE curriculum aligned with the national school curriculum, teacher standards, and recent reforms?

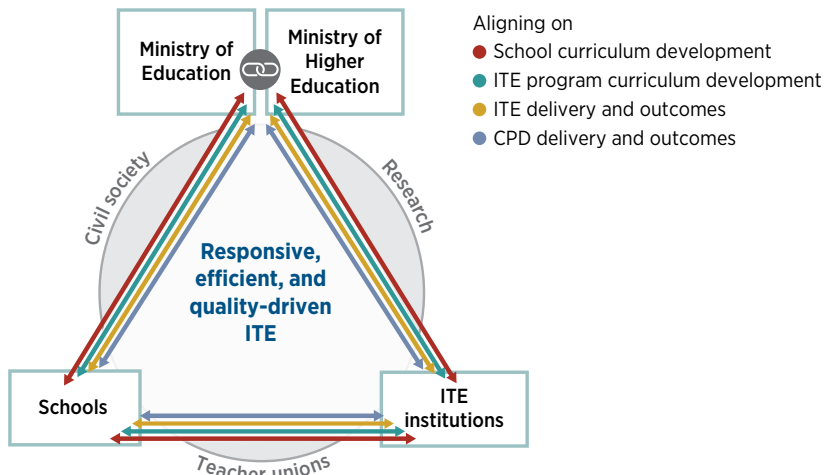
Teacher Workforce Planning

- How are teacher workforce needs forecast (by subject, location, language, grade level), and which entities are involved?
- How are these forecasts used to determine ITE program capacity and entry requirements?
- What are the current challenges in teacher supply and demand (for example, shortages, oversupply, attrition)? How is ITE policy adapting?

Introduction

Institutions offering initial teacher education (ITE) operate with varying degrees of autonomy. Although this autonomy can foster innovation, it may also create disconnects between classroom realities and teacher preparation. Such misalignment can lead to an imbalance in the number or types of teachers produced, outdated ITE curricula, and poorly managed field placements.

Figure 6.1 Aligning Institutions for Responsive, Efficient, and Quality-Driven Teacher Preparation



Source: Original figure for this publication.

Note: CPD = continuous professional development; ITE = initial teacher education.

Strong alignment between ITE providers and key system actors—such as government authorities, schools, and quality assurance agencies—is essential to ensure the relevance and quality of ITE (figure 6.1).

Adopting an education systems approach that emphasizes collaboration and interconnectedness is critical for delivering high-quality ITE and fostering a coherent education system. This chapter explores the ways in which institutions can be aligned to enable responsive, efficient, and quality-driven ITE.

Enabling Coordination Between Government Authorities and ITE Institutions

The relationship between ITE providers and government authorities can vary considerably both between and within countries (OECD 2019). ITE institutions may operate under the auspices of ministries of education or higher education (or both), be attached to regional authorities, function as departments or schools within universities, or, if private, remain relatively autonomous. As education systems become more complex, these relationships can evolve, sometimes resulting in multiple—and occasionally conflicting—lines of accountability.

Strong, well-defined relationships between ITE institutions and relevant government agencies are essential to ensure that ITE aligns with national educational goals, policies, and standards (World Bank 2019). Effective coordination, regulation, and collaboration are often required in areas such as policy development and implementation, quality assurance, human resource management, research, and continuous professional development (CPD). High-performing education systems, such as those in Finland and Singapore, typically demonstrate strong connections between government agencies and ITE institutions in these areas while still allowing ITE providers a degree of autonomy (Darling-Hammond 2017).

An example comes from Bahrain, where the Bahrain Teachers College (BTC)—which replaced the country’s previous colleges of education—is governed through a tripartite partnership involving the Ministry of Education (MOE), the Bahrain Economic Board, and the University of Bahrain. Although the BTC is housed within the University of Bahrain, it maintains autonomy. The board overseeing the college includes representatives from the MOE, the University of Bahrain, the private education sector, and the BTC itself (Case Study 1). Such governing arrangements help ensure alignment and collaboration across ITE institutions, education ministries, and other aspects of the education system.

In addition, a range of other ministries may be involved in ITE initiatives, particularly those targeting underserved areas. For example, box 6.1 describes the Localized Government-Sponsored Teacher Education Program in China, which demonstrates the importance of interministerial coordination in such efforts.

Box 6.1

China: An ITE Intervention to Achieve Rural Education Equity

To address ongoing teacher shortages in rural and disadvantaged regions, Chinese provincial governments have introduced the Localized Government-Sponsored Teacher Education Program (LGSTEP). This initiative focuses on human capital development by selecting secondary school graduates from designated counties, through competitive examinations, for enrollment in regional initial teacher education (ITE) institutions.

(continued)

Box 6.1**China: An ITE Intervention to Achieve Rural Education Equity (*continued*)**

Participants sign agreements with provincial education authorities and host universities, receiving comprehensive financial support—including full tuition remission, subsidized housing, and monthly living allowances—throughout their four-year undergraduate education. In return, graduates are required to serve six years in designated rural schools within their home prefectures, typically in nationally designated poverty-alleviation counties that face significant teacher retention challenges.

The program's structure is built around three key operational mechanisms:

- *Demand-driven enrollment planning.* Provincial education departments conduct biennial needs assessments for primary school, preschool, special education, and subject-specific teaching positions. ITE institutions then develop specialized curricula and admissions quotas aligned with regional staffing requirements.
- *Institutional specialization framework.* ITE institutions—known as normal universities and colleges—leverage their disciplinary strengths through differentiated program delivery. This vertical integration spans from early childhood education specialists to secondary science, technology, engineering, and mathematics (STEM) educators, ensuring alignment between institutional capacity and regional needs.
- *Practice-oriented professional development.* The program's place-based orientation facilitates early clinical experiences through partnerships with county-level schools and educational research institutes. Key features include mandatory internships in future placement schools (for student teachers from rural areas who commit to teaching in their hometowns); collaborative field placements with mentor teachers (for other student teachers who do not have an employment agreement); action research projects addressing local pedagogical challenges; and reciprocal professional development exchanges between student teachers and in-service teachers.

Demographic analysis reveals significant program advantages: 92 percent of student teachers originate from the rural counties they serve, fostering strong community ties and cultural competence. This localized recruitment strategy also leads to strong retention, with 78 percent of graduates from the LGSTEP program staying in post beyond mandatory service periods—substantially higher than national

(*continued*)

Box 6.1**China: An ITE Intervention to Achieve Rural Education Equity (*continued*)**

averages for nonlocal rural teachers. The cultural congruence between teachers' lived experiences and student teachers' backgrounds enhances the implementation of culturally responsive pedagogy, particularly in ethnic minority regions.

Program sustainability is ensured through an interministerial governance framework involving nine national agencies, each coordinating various aspects: targeted admissions policies (Ministry of Education), fiscal allocations (Ministry of Finance), rural development integration (National Rural Revitalization Administration), employment guarantees (Ministry of Human Resources), housing support (Ministry of Housing), and more. This cross-sectoral coordination model exemplifies China's institutional approach to addressing educational disparities through vertically integrated policy implementation.

Source: Provided by the United Nations Educational, Scientific and Cultural Organization (UNESCO) Teacher Education Center, Shanghai, China.

Reform and Innovation

ITE institutions are well placed to provide input and guidance on a wide range of teacher policy changes and broader education reforms. When a ministry of education makes changes to a country's curriculum or teaching guidance and expectations, ITE must also incorporate these changes to ensure that graduates are well prepared for the new expectations they will face upon entering the profession. To this end, ITE institutions need to be attuned to reforms as they are introduced and ready to modify programs and training approaches to align with curricular and pedagogical reforms (UNESCO 2021).

Unfortunately, ITE institutions are not always involved in the decision-making, innovation, testing, or implementation of curricular and pedagogical reforms, and they may not even be informed of these changes in time. This has implications not only for the quality and relevance of preparation that ITE programs offer but also for the reforms themselves because ITE institutions could be well positioned to provide strategic input on education system reform and innovation efforts.

Regulatory Considerations

Depending on the system, government regulations can define whom ITE institutions hire, who pays their staff, how they are funded, how they procure goods and services, how and to whom they report, and what standards are applied. Quality assurance mechanisms targeting ITE institutions and programs play a central role in the regulatory process. Strong links between ITE providers and quality assurance actors can help ensure that standards and regulations are well understood and effectively enforced. In addition, ITE institutions can contribute to the development of regulations and quality assurance guidelines, helping to ensure that these are appropriate and implementable.

Teaching standards and teacher certification criteria are also key areas for collaboration between ITE institutions and government (UNESCO and TTF 2019). Teaching standards articulate the essential knowledge, skills, and values expected of teachers, serving as clear benchmarks that help align teacher preparation and professional growth with the broader goals of the education system (box 6.2). ITE providers must ensure that their programs prepare student teachers to meet these standards. Given their position at the intersection of knowledge and practice, ITE institutions are well placed to help shape expectations and standards for the knowledge, skills, and performance of student teachers, new teachers, and experienced teachers, as well as to provide insight into how ITE institutions can work toward achieving these standards.

Box 6.2

Teaching Standards as a Social Consensus to Drive Education Reform

Teaching standards define the knowledge, competencies, values, and practices expected of teachers at various stages of their careers. They specify what teachers should know and be able to do, providing clear benchmarks to guide initial teacher education (ITE), teaching practices, ongoing learning, and professional dispositions in alignment with education system goals and structures.

Teaching Standards as a Foundation for Social Dialogue and Policy Reform

Teaching standards are more than administrative tools. They represent a broader social consensus on the roles and expectations of teachers

(continued)

Box 6.2**Teaching Standards as a Social Consensus to Drive Education Reform (*continued*)**

in society. This consensus emerges through inclusive policy dialogue between education stakeholders—such as policy makers, teachers, teacher educators, students, community members, and civil society—connecting individual visions for education with collective and national aspirations. In this way, teaching standards help enhance trust and mutual understanding among key actors. In countries supported by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the development of teaching standards typically involves stakeholder engagement, national consultations, joint technical working groups, and multiple reviews. This co-construction process strengthens local ownership, contextual relevance, and long-term sustainability.

The Global Framework of Professional Teaching Standards (EI and UNESCO 2019) exemplifies this approach. Rooted in extensive international consultations, it promotes the use of standards not only as instruments of regulation but also as catalysts for dialogue on teacher professionalism. By supporting professional identity and clarifying the roles of teachers in society, well-designed standards can also help boost teacher motivation and retention, particularly when linked to meaningful opportunities for recognition and advancement. While teaching standards may be useful in themselves, the processes of developing and implementing them contribute to supporting and enhancing the teaching profession.

From Frameworks to Local Impact: The Shanghai-FIT Initiative

As one example, the Shanghai Funds-in-Trust (Shanghai-FIT) initiative has recently supported several countries in the Sub-Saharan Africa and East Asia and Pacific regions in revising or developing national standards, drawing on UNESCO's global frameworks. Activities have included regional analyses, technical support for the development of national standards, and peer learning workshops.

In several contexts, standards are also being integrated into broader national qualifications frameworks, helping to ensure alignment with teacher certification systems, career structures, and other aspects of the education system. These include the following:

- *In Sierra Leone*, the National Framework of Professional Standards and Competencies for Teachers and School Leaders, developed through extensive consultations and adopted in 2017, has been integrated into

(*continued*)

Box 6.2**Teaching Standards as a Social Consensus to Drive Education Reform (*continued*)**

teacher licensing, appraisal, and policy frameworks. Its implementation has institutionalized professional standards and strengthened dialogue between teachers and education authorities.

- *In The Gambia*, efforts led by the Ministry of Basic and Secondary Education have been underway since 2022 to advance an existing draft Teacher Competency Framework in alignment with global and regional tools, such as the African Union Commission’s 2019 Continental Framework of Standards and Competencies for the Teaching Profession. The process has benefited significantly from national consultations and validation workshops, supporting a clearer vision for teacher preparation, professional development, and career progression.
- *In Sri Lanka*, the National Competency Framework for Teachers, finalized and published in 2022, with UNESCO support through the South Asia Centre for Teacher Development, highlights core twenty-first-century skills such as creativity, collaboration, and critical thinking. It now serves as a reference for guiding ITE, in-service training, and emerging teacher appraisal processes nationwide.

These and other examples illustrate how standards, when rooted in broad consultation, become living frameworks that are context-sensitive and adaptable to evolving societal and educational needs. By placing inclusive dialogue at the heart of development processes, teaching standards can serve not only as technical benchmarks but also as shared commitments to strengthening the profession and elevating the roles of teachers in society.

Sources: AUC 2019; EI and UNESCO 2019; Nwokeocha, Kah, et al. 2023; Nwokeocha, Sessay, et al. 2023; Sri Lanka MOE 2022.

Human Resource Management

Teacher supply and demand have significant implications for ITE, influencing decisions about selection, deployment, and retention. Therefore, strong and coherent relationships are essential between ITE institutions and those responsible for determining teacher needs—including the required number of teachers, their specializations, and key target demographics. Effective coordination among human resource management departments, schools, and ITE institutions can help prevent oversupply and undersupply

of teachers. Such coordination also enables ITE institutions to align recruitment and ITE programs with national priorities, particularly in areas experiencing teacher shortages (such as specific subjects, languages, or geographic regions).

However, the challenge extends beyond simply quantifying teacher needs. For example, when governments introduce alternative pathways into the teaching profession or create new categories of teacher positions (such as contract teachers), ITE institutions are not always engaged in the process—either in providing policy advice or implementing related programs. Collaboration between ITE institutions and other parts of the education sector will add value in the development of key teacher policies.

Funding

When the government partially or fully finances ITE institutions, both parties share responsibility. ITE institutions should use government funding efficiently and report on resource utilization, demonstrating the impact of funded programs on teacher preparation. The government, in turn, is responsible for allocating sufficient resources to ITE to meet agreed-upon targets and standards. Fulfilling these responsibilities requires clear and strong coordination regarding budgeting, resource availability, and accountability.

Promoting Collaboration Between Civil Society Organizations and ITE Institutions

Interactions with civil society organizations, such as teacher unions, private education associations, and parents' associations can help ensure the quality and relevance of ITE. Teacher unions and associations are particularly well positioned to provide input on teachers' needs and identify areas where ITE could better support future teachers and enhance the prestige of the profession. These associations also serve as a critical avenue for amplifying teachers' voices in policy making.

Professional standards defined by teacher organizations can provide an important foundation for ITE reforms. Reflecting this influential role, Education International—a global union federation of teachers' organizations—and the United Nations Educational, Scientific and Cultural Organization (UNESCO) jointly developed a global framework of professional standards (EI and UNESCO 2019), which can serve as a guide for developing national professional standards (box 6.3).

Box 6.3**Involving Teacher Unions in ITE Reforms to Ensure Quality and Respect for Teacher Professionalism**

According to the United Nations Secretary-General's High-Level Panel on the Teaching Profession, social and policy dialogue with teachers' organizations should be "the principal means for developing policies on education, teaching and the teaching profession" (recommendation 48) (ILO 2024). Initial teacher education (ITE) policies and curricula are no exception. The panel recognizes that dialogue with teachers and their organizations regarding ITE is vital "to ensure that teachers can play a leadership and innovation role in relation to new subject matters, pedagogies and technologies within a learner-centred approach" (recommendation 50). Collaborating with teacher unions on ITE reforms—as in the examples described below—ensures that teachers have a voice in shaping the future of their profession.

"Quality Educators for All" project. Delivered by Education International (EI) and Oxfam Novib, "Quality Educators for All" provides useful lessons for incorporating teacher voices into ITE reforms (Sinyolo 2021). Carried out in Mali, Tanzania, and Uganda with EI member organizations—the National Union of Education and Culture (Syndicat National de l'Education et de la Culture, or SNEC-UNTM), the Tanzania Teachers Union (TTU), and the Uganda National Teachers Union (UNATU)—the project provided unqualified or underqualified teachers with training programs developed through a participatory process including teacher unions, government, and other stakeholders.

In Uganda, for example, a teacher competence profile was developed for primary school teachers, which helped identify gaps in teacher skills and training needs. Training modules were created on life skills, gender-responsive pedagogy, peace, and mother tongue education, and were adopted by ITE institutions. In Tanzania, the same multipartner approach led to a consensus-based competence profile for early childhood educators, which informed the development of training programs leading to an education diploma (EI 2021).

Partnership on teaching standards in South Africa. In South Africa, professional teaching standards were developed in partnership with teacher unions and now provide a framework to guide the entire continuum of teacher preparation and development (Mokgalane 2024). Recently, an EI member organization, the National Professional Teachers' Organisation of South Africa (NAPTOSA), has also been a strong

(continued)

Box 6.3**Involving Teacher Unions in ITE Reforms to Ensure Quality and Respect for Teacher Professionalism (*continued*)**

advocate for ITE reforms that address the gap between ITE and actual teaching needs.

Despite South Africa's Minimum Requirements for Teacher Education Qualifications (MRTEQ) policy, curriculum content across South African higher education institutions (HEI) varies because of their autonomy. A large percentage of teachers enter the system with a Postgraduate Certificate in Education (PGCE) after completing an undergraduate degree in mathematics or language without sufficient training in practical classroom teaching. Additionally, students in their second HEI year may change their specialization, even if they were initially accepted or awarded a bursary for a specific level of education or subject, affecting the availability of specialized teachers in critical areas such as the foundation phase or mathematics.

Upgrading of teacher academic requirements in Indonesia. The Teachers Association of the Republic of Indonesia (PGRI) raised concerns about the poor quality of ITE and successfully advocated for a bachelor's degree as the minimum academic requirement for entering the teaching profession. Before this requirement was officially introduced in 2005 with the enactment of the Teachers and Lecturers Law (UU No. 14/2005), many teachers, particularly in schools, only held diplomas from teacher training colleges or institutes. These diploma programs were designed as shorter, more practical routes to becoming a teacher, emphasizing classroom teaching techniques rather than deep subject matter expertise or advanced pedagogical knowledge and skills.

At the time, around 65 percent of teachers did not meet the bachelor's degree requirement. After the law was enacted, a transition period allowed teachers to upgrade their qualifications. As a result, 90 percent of Indonesian teachers now hold a bachelor's degree. This shift led to a revision of the ITE curriculum, which now emphasizes competency-based teacher training, focusing on practical applications such as lesson simulations, pedagogy, and digital skills. The reform has raised formal qualification levels and increased the attractiveness of the profession, although its longer-term implications for teaching quality and student learning outcomes are still emerging. Although challenges remain—particularly in rural and remote areas where

(continued)

Box 6.3**Involving Teacher Unions in ITE Reforms to Ensure Quality and Respect for Teacher Professionalism (*continued*)**

access to higher education is still limited—the policy has raised academic and professional standards for teachers nationwide, ensuring that education is delivered by qualified, well-trained professionals.

These examples underscore that involving teachers in ITE reforms is crucial for ensuring the quality of education and respecting teacher professionalism. Education unions bring valuable insights from the practical experiences of their members, making ITE programs more relevant and effective. As seen in these examples, social dialogue—constructive communication between teacher unions and governments—fosters collaboration and mutual respect, leading to better, more equitable educational reforms.

Promoting Collaboration Between Schools and ITE Institutions

Strong relationships between ITE providers and schools are essential for high-quality teacher preparation. When ITE institutions are well informed about what is happening in classrooms, they are better equipped to prepare teachers effectively. Information and insights from schools about student and teacher needs play an important role in informing ITE program development and ensuring that ITE meets the needs of the education system. This helps maintain the ongoing relevance of program content and approaches. Opportunities for teacher educators and other staff from ITE institutions to observe classroom practice can help ensure that ITE remains responsive to classroom realities and the needs of both the system and teachers.

Field placements are a key point of interaction between schools and ITE. Learning experiences from ITE courses and field placements should be well aligned, and the type of teaching to which student teachers are exposed during field placements should be synchronized with what is taught in ITE institutions. This alignment is particularly important when reforms to school curricula or pedagogy are introduced.

Ideally, both ITE institutions and schools invest together in student teachers' learning and skills development during field placements. Schools provide

mentor teachers and school leaders who offer strong modeling, mentorship, and feedback, while ITE institutions provide supervising teacher educators who can give feedback and help candidates connect their placement experiences to the conceptual learning from courses. In the best cases, mentor teachers and supervising teacher educators collaborate to ensure that the student teachers benefit fully from the field placement. However, in many cases, weak coordination between ITE institutions and schools can complicate field placement logistics and limit the quality of the field placement experience.

In-service teachers and other school staff can also benefit greatly from closer relationships with ITE institutions. Engagement between schools and ITE institutions creates opportunities for teachers to be exposed to new research and innovations, particularly when ITE institutions are involved in teacher CPD and other teacher support services.

Encouraging Cohesion Across CPD and ITE

ITE and CPD are two stages of the same process of teacher professional learning, both forming part of teachers' lifelong professional learning journeys. CPD should serve as a “continuation” of ITE (UNESCO and TTF 2019), building on the knowledge, skills, and teaching strategies developed during ITE. Strong, intentional links between ITE and CPD can help prepare teacher candidates, support new teachers, and enable in-service teachers to continuously learn and improve (MacPhail et al. 2022).

Weaknesses in the ITE system can have significant implications for CPD. For example, inadequate screening mechanisms in ITE may require additional forms of screening throughout a teacher's career. Similarly, when ITE is weak, CPD may be expected to compensate for gaps in teachers' knowledge and skills. This approach is evident in some World Bank-supported projects, where CPD—which has historically received more investment than ITE—is often treated as a substitute for more rigorous ITE rather than as a complement to and continuation of it (World Bank 2019).¹

Despite the value of strong, intentional synergies between ITE and CPD, in many education systems, ITE, induction, and CPD are organized in silos rather than as stages of a teacher education continuum. For instance, in Ireland, actors involved in CPD are typically targeted by reform messages before those in ITE and induction (MacPhail et al. 2022). Moreover, alignment between ITE and CPD is often not prioritized in efforts to strengthen teacher preparation and development, as seen in a World Bank analysis of its education portfolio (World Bank 2019).

Opportunities to Align Program Content and Strategies

There are several ways in which ITE and CPD can be linked to enhance their contribution to education improvement while also aligning with broader education system goals, teacher policies, and professional standards. These connections can be established by aligning the content, support structures, and strategies across ITE and CPD.

Although ITE and CPD serve teachers at different stages—ITE focuses on preparing teacher candidates, while CPD supports practicing teachers with more classroom experience—there are important opportunities for alignment. When the content of ITE and CPD, as well as the expectations for teachers, are coordinated, it helps create a more responsive and quality-driven system for teacher learning. Achieving this alignment requires deliberate connections between teacher standards, the ITE curriculum, CPD curricula, and the school curriculum. Ensuring that both ITE and CPD are aligned with professional standards helps guarantee that essential skills, knowledge, and competencies are consistently reflected throughout ITE and CPD (Muzaffar, Rahim, and Jessee 2011).

In addition to aligning content, ensuring complementarity in the strategies used in ITE and CPD can further strengthen the links between these stages of teacher learning. For example, ITE can introduce positive learning practices, such as self-reflection and action research, that are valuable for student teachers both during ITE and throughout their careers. CPD can then reinforce and expand on these practices. A strong focus on action learning and action research in ITE helps equip teacher candidates with the skills to remain actively engaged in their professional growth throughout their careers (Penney and Leggett 2007).

Induction Programs

Induction programs can serve as a bridge between ITE and CPD. There is clear evidence of the challenges faced during the first few years of teaching, and well-structured developmental opportunities through induction programs—sometimes coupled with probationary periods—can be valuable for supporting new teachers. In the case of probationary periods, induction can also provide an additional screening mechanism (Bruns and Luque 2015).

For example, in Shanghai, China, during the induction period, new teachers spend half their time in the classroom with a mentor teacher and the other half in further training at district training centers. They are not considered fully qualified until they successfully complete this period (Liang, Kidwai,

and Zhang 2016; Zhang, Ding, and Xu 2016). In Belize, induction for first-year teachers includes classroom observation, mentoring, tutoring, action research, and assessments (Bruns and Luque 2015).

When designing induction programs, it is important to consider how to leverage the training, mentoring, and assessment processes already in place through ITE and school-based CPD while also being realistic about the capacity of schools and training institutions as well as the need for gradual and continuous improvement.

Linking Institutions

Ongoing engagement between institutions providing ITE and CPD can help ensure coherence in the content and practices of teacher preparation and development. However, this is rare in practice, including in projects to support the upskilling of teachers (World Bank 2019).

High-level coordination among offices involved in curriculum design, ITE, and CPD could serve as an important institutional starting point for facilitating synergies between ITE and CPD. Where different administrative bodies are responsible for ITE and CPD, establishing links between the two can be more challenging but remains necessary (Muzaffar, Rahim, and Jessee 2011).

Fostering Collaboration Between Tertiary Education and ITE Institutions

In many education systems, a secondary education diploma is required for entry into ITE programs—making ITE institutions, by definition, part of the tertiary education system. Although ITE institutions and other tertiary education providers sometimes overlap, they often operate in silos, which can negatively affect the quality of ITE. In many parts of the world, ITE institutions function in isolation from research activities (Stein and Short 2001). Typically, ITE institutions do not conduct research, and university departments do not view ITE institutions as potential research partners.

Collaboration between ITE institutions and the broader tertiary education system can yield mutual benefits through the exchange of data and research inputs. Researchers can provide ITE institutions with educational data and evidence to help strengthen ITE program content and delivery. In turn, ITE institutions can support research initiatives, offer spaces for field research, and conduct studies on pedagogy, classroom practices, and teacher performance. Greater engagement of ITE institutions in research, and of

education researchers in teacher education, may create opportunities for student teachers to become more aware of and attentive to research (MacPhail et al. 2022). Given the growing interest in teachers as action researchers, increased interaction between universities and ITE institutions can help teachers learn more about research methodology and how to apply it in their practice (Penney and Leggett 2007).

Universities and ITE institutions can also collaborate on the professional development of teacher educators. Teacher educators sometimes hold degrees in education but have little or no classroom experience. In some systems, teacher educators are not considered university professors, making it difficult to attract strong candidates to these roles. As a response, some Scottish universities have introduced a “university teacher” designation, with parallel and equal-status career paths in teaching and research (University of Edinburgh, n.d.).

In some high- and middle-income countries, ITE institutions, universities, and research institutes are developing increasingly close relationships (Kitamura 2016). This trend reflects efforts to professionalize teaching, enhance the quality of teacher preparation, and align ITE with global academic standards. For example, Viet Nam is in the process of replacing teacher training colleges with teacher training universities that provide ITE and CPD and also conduct research in the education field (Case Study 3).

Areas for Future Research: Remaining Evidence Gaps

The following areas for future research related to aligning institutions for responsive, efficient, and quality-driven ITE represent notable gaps in the education evidence base (particularly in low- and middle-income country contexts) and warrant targeted investigation:

- When ITE sits under both education and higher education authorities, what institutional designs reduce conflicting mandates and improve decision speed and clarity? These could include governance compacts, joint steering committees, streamlining accreditation tied to workforce needs, and clear decision rights.
- What are effective, scalable processes for keeping ITE curricula aligned with changes in the school curriculum, teaching standards, and pedagogy reforms—especially when reforms roll out quickly? These could include standing curriculum alignment panels, rapid review cycles, templated syllabi updates, and feedback loops from schools. And how can formal and informal collaborations between schools, systems, and ITE programs be incentivized?

- How can workforce forecasts be credibly translated into ITE actions? Options could include admissions caps, scholarship targeting, specialization tracks, and adjustments to entry requirements based on projected subject and location needs.
- What are the impacts of tightening or loosening ITE entry requirements on teacher supply, teaching quality, and equity in who becomes a teacher? The impacts could be examined across gender parity, rural origin representation, and language or ethnic diversity, alongside quality and supply metrics.
- What institutional coordination is needed so that new categories of teachers and pathways do not bypass quality assurance, induction, or professional standards? This could include cross-agency approval processes, pathway accreditation protocols, induction guarantees, and standards enforcement mechanisms.
- When CPD has historically substituted for weak ITE, what sequence of reforms successfully shifts systems toward stronger ITE without disrupting teacher supply? This could include phased strengthening of ITE, rebalancing CPD toward advanced practice, bridge programs for in-service teachers, and transitional funding arrangements.
- What models of “research-active” ITE institutions lead to the most well-prepared teachers? These could include embedded practice labs, partnerships with schools for practitioner research, faculty incentives for applied research, and open data platforms for instructional improvement.

Key Takeaways

This chapter has examined the ways in which institutions can be aligned to enable responsive, efficient, and quality-driven ITE. Key takeaways include the following:

- *ITE is a complex system involving multiple stakeholders, including ITE institutions, government authorities, schools, and civil society.* When these stakeholder groups share a common understanding of the role, goals, and substance of ITE, they are better positioned to contribute to effective teacher preparation and improved educational outcomes.
- *Effective coordination and communication among government departments responsible for ITE and primary education are essential.* Such alignment ensures that regulatory processes, workforce planning and management, education reforms, and financing are relevant and effective. In addition, involving ITE institutions and civil society in education reform efforts,

such as updating ITE and primary school curricula and developing teacher policies, enhances the relevance and impact of these reforms by drawing on diverse perspectives and expertise.

- *Collaborative partnerships between ITE institutions and schools, with shared responsibilities for mentorship, supervision, and learning, help ensure that ITE programs are grounded in the realities of school environments.* These partnerships also facilitate effective field placements and provide opportunities for school staff to engage in professional development and educational research.
- *Strong links between ITE institutions and CPD providers help align content and strategies, reinforcing teachers' skills development throughout their careers.* High-quality induction programs are particularly important for supporting new teachers as they transition from ITE to professional practice.
- *Collaboration and mutual learning between ITE programs and universities—or between practice-oriented and research courses within universities—advance the ITE knowledge base and encourage the integration of the latest research and classroom realities into teacher preparation.*

Note

1. Given limited attention to strategic links between ITE and CPD in World Bank–supported projects, the World Bank’s Independent Evaluation Group has identified improved alignment between the two systems as an area of need (World Bank 2019).

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Enhance **quality assurance processes** to maintain high standards in ITE

Assess and validate the quality of ITE institutions, programs, and candidates

- ▶ **Implement quality assurance methods that are contextually relevant**, considering the system's capacity, institutional structure, and education culture.
- ▶ **Develop quality assurance systems that enhance both the quality and accountability** of ITE institutions, programs, and candidates.

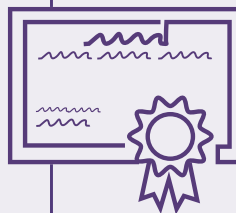


Use standards and regulations as a basis for quality assurance

- ▶ **Establish standards for** ITE provision, including program length, content, field placement, and resources.
- ▶ **Link** teacher performance standards and ITE program quality assurance.
- ▶ **Establish regulations to manage the ITE marketplace**, particularly addressing the presence of low-quality providers.

Consider accreditation to signal ITE program quality

- ▶ **Use accreditation systems** that incorporate measures of inputs, processes, and outcomes.
- ▶ **Ensure that accreditation systems have the capacity and independence** necessary to assess compliance.
- ▶ **Foster a culture of internal quality assurance**, enabling ITE providers to evaluate their own results, reflect on them, and establish actions for improvement.



7

Principle 5: Enhance Quality Assurance Processes to Maintain High Standards in ITE

KEY QUESTIONS FOR POLICY MAKERS

Quality Assurance Mechanisms

- What internal and external quality assurance (QA) processes are in place (accreditation, program reviews, internal self-evaluation, and external validation)?
- How are standards for initial teacher education (ITE) provision (program content, field placement, resources) established and enforced?
- Is teacher certification or licensure required? How does this process link to ITE program completion and readiness?

Monitoring, Evaluation, and Learning

- What data are collected to monitor ITE effectiveness (student teacher demographics, field placement quality, graduate employment and retention, performance)?
- What is the capacity for local research on teacher education? How are findings used to inform policy and practice?
- How is technology, including artificial intelligence (AI), leveraged to enhance ITE delivery, reduce teacher workload, or support student learning? What are the opportunities and challenges?

Introduction

To ensure that ITE fulfills its promise for prospective teachers, students, and education systems, maintaining high quality is essential. Monitoring, supporting, and certifying that ITE meets necessary standards is crucial for ensuring this quality. Therefore, strong QA mechanisms are vital for

building effective ITE systems (Ingvarson et al. 2013; Sanyal 2013). QA and evaluation of ITE are part of a broader focus on accountability (Cochran-Smith et al. 2018).

The structure of the QA system determines where accountability for the quality of new teachers lies. For example, QA measures focused on ITE providers suggest that policy makers hold these providers accountable for the quality of their graduates. In contrast, QA focused on recruitment may indicate that governments are responsible for making teaching an attractive profession, through measures such as competitive salaries and favorable working conditions. High-performing education systems see this as a shared responsibility (Ingvarson and Rowley 2017).

The design of QA systems also reflects and is informed by the education system's culture, including the degree to which the system is oriented toward compliance or trust in institutions and individual teachers. In many education systems, QA of ITE is based on a shared understanding of what "quality" means among ITE stakeholders, which is an essential feature of a well-functioning QA system. Fitness for purpose—that is, the extent to which ITE meets its goals within the education system—ultimately determines the quality of ITE and is an important consideration in some QA systems. QA systems most commonly assess inputs, processes, and outcomes against minimum standards (Sanyal 2013). This chapter covers the role of QA in ITE, the mechanisms that can be used to assure the quality of ITE, how the ITE marketplace can be regulated through QA systems, and how these systems can be implemented, taking account of the context.

The Role of Quality Assurance in ITE

Broadly, QA helps ensure that ITE institutions, programs, or candidates meet minimum requirements and, in some cases, measures excellence in ITE provision. By doing so, QA supports system alignment and coherence. High-quality ITE depends on alignment between policy and practice as well as coordination among the many actors and institutions involved.

QA systems play a key role in fostering this alignment—for example, by examining coherence across the ITE curriculum, the school curriculum, major national policy initiatives, and the settings where teachers will be teaching. In this way, QA systems help to establish and maintain the relevance of ITE (Bashir et al. 2018). For example, analysis of data from the 2007–08 Teacher Education and Development Study in Mathematics (TEDS-M) found statistically significant relationships between QA strength and ITE graduates' mathematics content knowledge and pedagogical

content knowledge as well as students' mathematics scores on international examinations (Ingvarson and Rowley 2017).¹

QA can also be an important strategy for addressing specific policy challenges within ITE, such as the existence of low-quality providers and the mismatch between the supply of ITE graduates and demand. In such circumstances, strong QA systems can help respond to pressing policy issues, whereas insufficient systems allow these challenges to go unchecked. (See, for example, Case Study 5 on Chile.)

Given this important role, the World Bank's Independent Evaluation Group has identified QA of ITE as a key driver of educational quality, recognizing that strong ITE programs result from strong, well-executed education policies (World Bank 2019).

Although QA processes can identify critical areas for improvement—and, depending on enforcement mechanisms, help regulate the marketplace—these processes alone do not improve the quality of ITE that an institution or program provides. Such improvements still depend on the design and implementation of effective policies and programs. However, continuous QA provides opportunities to ensure that institutions remain focused on making ongoing improvements.

Exploring Mechanisms to Ensure the Quality of ITE

In the context of ITE, QA can happen at multiple levels: institution, program, course, and individual. It can be either internal—conducted by institutions themselves to ensure they meet their own standards—or external, carried out by government, parastatal, or private agencies affiliated with the government to meet systemwide standards (Sanyal 2013). QA may involve oversight of standards and curriculum for ITE, accreditation of ITE institutions and organizations, regulation of entry and exit screening, and certification or licensure of teacher candidates, among other factors. Although QA measures, particularly accreditation, are often associated with university programs, QA is important for any ITE model.

Decisions about which forms of QA to implement depend on available resources, political feasibility, and the state of the ITE landscape.

A comprehensive QA system covers the full scope of ITE, from attracting strong candidates into ITE to ensuring that those entering teaching are well equipped for the role. Strong policies are needed to inform all aspects of this process (Ingvarson et al. 2013).

Guidance for, and QA of, ITE are often linked to professional standards or policy guidance for teacher performance (see Muzaffar, Rahim, and Jessee 2011). In Nigeria, for example, criteria for entering National Colleges of Education are among the many features related to teacher accountability and performance under the National Teacher Policy Development Framework (World Bank 2009b).

Using Standards and Regulations as a Basis for QA

Standards and regulations for ITE components can inform many aspects of the QA process. They may address the length and type of program, the course content, the duration and specifics of field placements, the number of available places, the entry and exit requirements, the qualifications for teacher educators, the physical and human resources, and other factors (Muzaffar, Rahim, and Jessee 2011). These standards and regulations may differ depending on the types of programs, because different institutions and providers may offer different program types. For example, universities may offer bachelor's degrees, whereas short-cycle programs may offer diplomas, and the standards may vary accordingly.

Although field placement experience is a critical dimension of high-quality ITE, policy guidance on this aspect of ITE is weak in many contexts. As a result, decisions about organizing field placements are often left to individual ITE institutions, which may lack the capacity to effectively define the goals and approach for an effective placement. Greater attention to this aspect of ITE in QA systems could be beneficial, as seen in several World Bank-supported projects (World Bank 2019).

QA systems may also address entry into and exit from ITE. Some countries, such as Botswana and Singapore, have legislative or regulatory measures that fund only a specific number of spots in each teacher education institution, helping to match teacher supply with demand (Ingvarson and Rowley 2017). In addition, some QA systems focus on requirements for enrolling in or graduating from an ITE program.

While these entry requirements are intended to ensure candidate quality, they can also have broader systemic implications for the supply of student teachers. In Peru, for example, a national admissions bar was introduced in 2006, reducing admissions to non-university training institutes to a fraction of previous levels. Some institutes risked closure, and concerns about teacher supply arose, leading to the return of admissions control to training institutions six years later, albeit with a ministry-set enrollment cap (Bruns and Luque 2015). In addition to national requirements for entry into and exit from ITE, programs and institutions may also have their own

requirements, and candidate quality can be regulated through certification, as further discussed later.

Importantly, the existence of standards does not necessarily mean that programs or institutions are adhering to them. Education systems have different approaches to leveraging standards: some monitor and assess alignment to standards, while others go further by enforcing these standards through regulatory mechanisms (such as accreditation) that are aligned to the standards.

Leveraging Accreditation to Signal ITE Program Quality

A common regulatory strategy is accreditation—the process of formally recognizing that an institution or program meets established standards. Accreditation is used not only in ITE but also in other forms of higher education in some education systems. Its primary aims are to encourage quality control, quality improvement, and accountability in ITE (Sanyal 2013). Not every education system accredits ITE providers, and in many systems, unaccredited providers are still allowed to operate. Accreditation is more common in contexts with decentralized systems, where a wide variety of actors are involved in the provision of ITE (World Bank 2009a).

Globally, there is little empirical evidence on the impact of accreditation (Ingvarson et al. 2013), and its effectiveness is not always clear. Weak or voluntary accreditation mechanisms often mean that countries have little control over training institutions, whereas strong accreditation mechanisms allow agencies to close institutions that do not meet minimum needs (World Bank 2019). Even where unaccredited programs exist, accreditation can serve as a signal to prospective student teachers and employers about the quality of education and training a program provides.

The accreditation process can also identify areas of concern that a program or institution may aim (or be required) to improve (Sanyal 2013). While not establishing causal links, analysis of TEDS-M data found that countries with stronger accreditation and recruitment and selection are correlated with stronger mathematics subject and pedagogical knowledge among primary teacher candidates (Ingvarson and Rowley 2017).²

Accreditation systems vary substantially worldwide in (a) what they consider part of the QA process, and (b) the institutions responsible for accreditation. Traditionally, accreditation has focused largely on inputs—such as curriculum, staff, and resources—but there is a growing shift toward outcomes, with increased interest in assessing graduates' performance relative to teacher professional standards (Ingvarson et al. 2013).

Building this outcomes-oriented focus into accreditation processes can help ensure that institutions are preparing candidates to be effective teachers. International guidance on establishing accreditation agencies for higher education recommends focusing on inputs, processes, *and* outcomes (INQAAHE 2006). This approach allows for attention to many of the key factors that standards for teacher education may cover, such as curriculum, pedagogy, assessment, and teacher educators.

Other factors, such as the program's relevance to national learning goals and its value for money, may also be considered important quality factors by key stakeholders and thus integrated into the accreditation process (as the example in box 7.1 illustrates). International guidance on higher education QA also highlights the importance of evidence-based decision-making in the accreditation process (INQAAHE 2006), underscoring the need for available and reliable data and for ensuring that standards are well grounded in research and evidence (World Bank 2019).

The accreditation process can be controlled by state-run, semiautonomous, or fully autonomous agencies. Accreditation may be either voluntary or compulsory. A compulsory accreditation approach requires all institutions to become accredited and then periodically reaccredited, a practice common in parts of Europe and Latin America. Voluntary accreditation may be more feasible in contexts with limited QA capacity, but it can result in large numbers of unaccredited providers.

Box 7.1

Example of an ITE Quality Assurance Framework: African Virtual University

The African Virtual University's "Quality Assurance Framework for Teacher Education" includes the following quality considerations:

- *Fitness of purpose*, based on national goals, priorities, and targets, thereby ensuring national relevance for a particular African country
- *Value for money*, judged in relation to the full range of teacher education purposes set out in teacher education policies
- *Transformation*, in the sense of developing the capabilities of individual members of staff and students for personal enrichment as well as the requirements of social development, economic, and employment growth.

Source: Sanyal 2013.

Accrediting agencies may conduct their own evaluations or rely primarily on internal evaluations. For example, in Malaysia, the long-term goal is self-evaluation. However, internal evaluations may be subject to bias, indicating that such an approach requires strong accountability mechanisms and data verification (Ingvarson et al. 2013).

Accreditation is a useful lever for improving quality only if there is sufficient institutional capacity and political will to support its implementation. Without adequate capacity to regulate training institutions, or in the presence of political interference and other imbalances, accreditation processes are less able to support the quality of ITE (Sanyal 2013; World Bank 2019).

Building a Culture of Internal QA

QA can also take place within an ITE institution. Similar to external measures, this typically involves assessing certain quality features against minimum standards. Internal processes can be important for building strong ITE systems because QA is not only about accountability but also about supporting institutions in achieving sufficient quality. This requires ongoing, iterative evaluations and active efforts to improve based on these findings (World Bank 2019).

QA agencies may establish requirements for institutions' internal assessments of their own programs or activities. These assessments can consider factors such as institutional and program goals and mission, academic standards, program quality, program quantity, management effectiveness, research or other learning activities, and community engagement, among others (Sanyal 2013).

Internal QA processes can sometimes contribute to external QA processes. For example, in some countries, such as Malaysia and Thailand, internal QA processes are considered during accreditation. Linking of internal QA to an external process such as accreditation has the potential to encourage more rigorous internal QA mechanisms (Ingvarson et al. 2013).

Supporting ITE QA Through Teacher Certification

In addition to focusing on ITE institutions and programs, QA can also operate at the individual level. This is often achieved through national- or program-level standards related to entry into and exit from ITE as well as through teacher certification (referred to as "licensure" in some systems), which determines whether individual candidates are credentialed to teach.

The certification process is becoming increasingly common. Certification provides governments with a policy tool to promote greater alignment

between ITE and the needs of the education system (OECD 2005). However, evidence does not show a strong link between certification and student outcomes. In the United States, research suggests that teacher certification has, at best, a small impact on student achievement (Kane, Rockoff, and Staiger 2008). In some low- and middle-income countries, contract teachers (who are often not certified) appear to perform as well as, or better than, civil service teachers (who are typically certified) (Pugatch 2017). Although these findings may reflect the low quality of ITE rather than the limited effectiveness of certification as a QA mechanism, it nonetheless highlights limitations of certification as a candidate-level QA tool in low-capacity systems with high demand for teachers.

Although there is little evidence linking teacher certification to student outcomes in low- and middle-income settings, certification can provide an opportunity to raise qualification requirements, especially where they are very low (Pugatch 2017). Certification can complement or fill gaps left by ITE entry and exit regulations and has the potential to help build a stronger teacher workforce in the long term.

Countries take different approaches to certification, with requirements varying widely. In some contexts, there is no benchmark, or requirements are not enforced because of teacher shortages (Barrera-Pedemonte 2019). Even among top-performing countries, strategies differ, demonstrating that there is no one-size-fits-all approach to QA. In Finland, completion of teacher education is sufficient for certification (World Bank 2009c), whereas in Shanghai, China, teachers must pass a national test on subject knowledge and teaching abilities (Liang, Kidwai, and Zhang 2016) and successfully complete a probationary induction year to become fully qualified (Zhang, Ding, and Xu 2016). As with all aspects of QA, there is no single best practice for certification; the broader norms and strategies of the education system shape which approach is most appropriate in context.

Probationary periods can also help regulate quality at the individual level. In some systems, successful completion of a probationary period—ranging from a few months to a few years after new teachers begin their posts—is required for full certification. A probationary period allows systems to assess candidates based on teaching performance, which is often a better indicator of their capabilities than a written test. In some systems, the probationary period also serves as an induction period, providing essential support and further practical training. Both high-resource systems such as in Shanghai, China, and low-resource systems such as in Sierra Leone use this strategy.³

Regulating the ITE Marketplace Through QA Systems

QA systems, particularly accreditation processes, play an important role in regulating the ITE marketplace, especially in contexts where the number of ITE providers is expanding and includes many low-quality providers (Sanyal 2013). In parts of Latin America and South Asia, as well as elsewhere, the proliferation of low-quality providers has resulted in large numbers of ill-prepared teacher candidates, sometimes exceeding the number of available teaching posts. In Latin America, ministries of education have sometimes responded by raising accreditation standards to a level that compels low-quality institutions to improve or face closure. Even when unaccredited programs are not shut down, accreditation can still help regulate the ITE marketplace.

For example, when Chile began accreditation reviews of teacher education programs in 2006, four-fifths of programs received the lowest accreditation level or no accreditation at all. Within a few years, enrollment shifted substantially, with the majority of student teachers enrolling in accredited programs. In this case, shutting down nonaccredited programs was not necessary to prompt a widespread shift toward enrollment in accredited institutions. Additionally, legislation was proposed to require that teachers working in publicly funded schools be graduates of accredited programs, and only students in accredited programs would be eligible to apply for government grants or loans to finance their studies (Bruns and Luque 2015) (Case Study 5). With appropriate data and standards, accreditation agencies can play a meaningful role in regulating the teacher education marketplace, ensuring that an abundance of providers does not result in too many or too weak candidates.

Ultimately, the regulatory power of a QA system depends on its capacity. In some contexts, including some parts of South Asia, large numbers of underregulated, for-profit training institutes produce ill-prepared prospective teachers, outpacing the demand for teachers. Stronger QA mechanisms are essential to address these challenges. The absence of standards and low capacity for enforcement are substantial hurdles.

Implementing Contextually Relevant ITE QA Systems

QA systems often face major constraints in practice, even when they are well established on paper. Political interference can be a significant challenge.

The enforcement of standards may be hampered by weak data on the performance of ITE institutions (Béteille et al. 2020) as well as by limited capacity and expertise among QA personnel.

To address these capacity challenges, some countries prioritize technical expertise in their hiring processes. In several countries included in the one multicountry study, teacher educators or individuals with teaching experience were hired for QA roles (Ingvarson et al. 2013). Although this approach may help address the issue of limited expertise among QA personnel over time, in systems where teacher educators themselves have limited capacity, it may risk drawing the most capable teacher educators away from ITE institutions.

Additionally, accreditation processes that already exist for higher education can serve as a road map for the accreditation of ITE, providing an initial structure or offering lessons on what works and does not in a given context. In some settings, such as francophone Africa, regional QA networks for higher education may also provide a useful starting point for designing QA systems.

Areas for Future Research: Remaining Evidence Gaps

The following areas for future research related to enhancing QA processes represent notable gaps in the education evidence base (particularly in low- and middle-income country contexts) and warrant targeted investigation:

- Which QA approaches causally improve novice teaching practice and student learning? They could include comparative evaluations of standards enforcement, accreditation regimes, program review cycles, and candidate-level screening; designs that isolate formative versus high-stakes components; and cost-effectiveness analyses that link implementation fidelity to practice and learning gains.
- Which outcome measures are most valid and feasible for accreditation? They could include validation studies for teacher knowledge tests; performance assessments; classroom observation instruments; induction or probation outcomes; student learning proxies; reliability protocols for rater training and auditing; and multimeasure portfolio rules for weighting, aggregation, and error sensitivity.
- Under what conditions does voluntary accreditation—versus compulsory accreditation and enforcement (including closures)—meaningfully shift enrollment toward higher-quality programs? These conditions could

include tests of information salience and reputational effects; pairing voluntary accreditation with incentives such as scholarship and hiring eligibility and publication of ratings; and estimates of the incremental impact of compulsory recognition and closure authority on program quality and access.

- Which quality enforcement levers are most effective and politically feasible? These could include comparative assessments of eligibility rules for scholarships or loans; eligibility for public-sector hiring; publication of program ratings and dashboards; intake caps and closure authority; political economy mapping of veto points and feasibility constraints; and designs with phased timelines, appeal mechanisms, and provisions for currently enrolled students to complete their studies if a program is closed or loses accreditation.
- Which implementation strategies build QA capacity over time, and what staffing profiles perform best? Options could include phased standards with provider self-review linked to external validation; risk-based inspection regimes and sampling approaches; digital QA infrastructure; training models for observers and auditors; and comparative studies of staffing mixes (ex-teachers, teacher educators, auditors) on reliability, diagnostic accuracy, and quality of feedback.
- Which ITE program certification designs work best, and how do they affect recruitment, supply, and equity? These designs could include comparative trials of written tests, performance-based assessments, and field placement portfolios; analyses of impacts on recruitment and supply with attention to underrepresented candidates; and guardrails that prevent perverse incentives (teaching to tests, narrowing of pedagogy) such as multimethod portfolios and formative components.

Key Takeaways

This chapter has explored the role of QA systems, the mechanisms that can be used to ensure the quality of ITE, how the ITE marketplace can be regulated through QA systems, and how these systems can be implemented, taking account of the context. Key takeaways include the following:

- *QA systems help to promote and maintain quality and accountability of ITE institutions, programs, and student teachers.* These systems can take various forms, and the most appropriate approach depends on system capacity, institutional structure, and the culture and norms of the education system.

- *Standards and regulations can address multiple aspects of ITE, including program content, duration, field placement experience, teacher educator qualifications, physical and human resources, and entry and exit requirements.* Enforcement mechanisms vary, but QA is especially important in contexts where many low-quality (often private) providers have emerged.
- *Accreditation plays a key role in regulating the quality and operations of ITE providers through independent assessment.* Accreditation can inform prospective student teachers about the quality of the institutions they are considering. Internal QA processes enable ITE providers to review their own performance, reflect, and plan for improvement.
- *Teacher certification is an increasingly common strategy for regulating standards, but more evidence is needed to determine whether and how certification effectively enhances teaching quality.*
- *The effectiveness of QA systems depends on the capacity for enforcement and the availability of reliable data.* Political interference, limited expertise among QA personnel, and weak data systems can undermine the regulatory power of QA mechanisms. Strengthening technical capacity and leveraging existing accreditation structures in higher education can help address these challenges.

Notes

1. The TEDS-M study examined the relationship between dimensions of QA and prospective mathematics teachers' subject knowledge and pedagogical content knowledge in mathematics in 17 countries, mostly middle- and high-income.
2. Ingvarson and Rowley (2017) posit that requirements for entry into the profession may not affect student teachers until after their ITE program, helping to explain the weaker relationship between this stage of QA and student teachers' mathematics content and pedagogical content knowledge.
3. In Shanghai, China, in addition to a national examination, teaching candidates must participate in a one-year probationary induction period during which they teach half-time and participate in professional development half-time (Liang, Kidwai, and Zhang 2016; Zhang, Ding, and Xu 2016). In Sierra Leone, teachers become qualified following completion of ITE but can only be certified after completing the probationary period, which ranges from three to six months and overlaps with an induction period (TSC 2020).

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8

Conclusion: Summary of Principles and Research Investments

Introduction

To ensure effective foundational learning for all and promote student well-being, primary school teachers must enter the classroom equipped with the core knowledge and skills for teaching as well as a strong professional identity. This report has explored the rationale for investing in initial teacher education (ITE), reviewed global approaches to ITE, and identified the evidence behind five principles of ITE that are critical for building effective teacher preparation systems.

In addition, building a more robust ITE evidence ecosystem can help both policy makers and teacher educators maximize the potential of ITE. For policy makers, better evidence can help identify which ITE policies and programs work as well as which areas need further investment and improvement. For teacher educators, better evidence can help inform program and practice improvement, supporting the development of more effective new teachers.

This chapter summarizes the five key principles for building strong ITE systems and highlights the importance of a learning agenda to drive continuous ITE improvement.

Key Principles and Policy Actions for ITE

Primary school teachers shape the future by equipping learners with foundational skills essential for academic achievement, work, and life. From the first day of their teaching careers, every teacher should possess the core knowledge and skills for teaching, along with a strong professional identity. These qualities enhance the effectiveness of education investments, programs, and initiatives, leading to improved foundational learning outcomes.

Primary school teachers need to be equipped with subject matter knowledge, particularly language and mathematics, with mastery above the level they will teach. In addition, they need subject-specific and general pedagogical knowledge and skills, including an understanding of child learning and development, as well as practical skills in planning lessons, teaching, assessing, creating positive learning environments, and addressing diverse student needs. Furthermore, primary school teachers need an understanding of key ethical considerations, responsibilities, and professional norms.

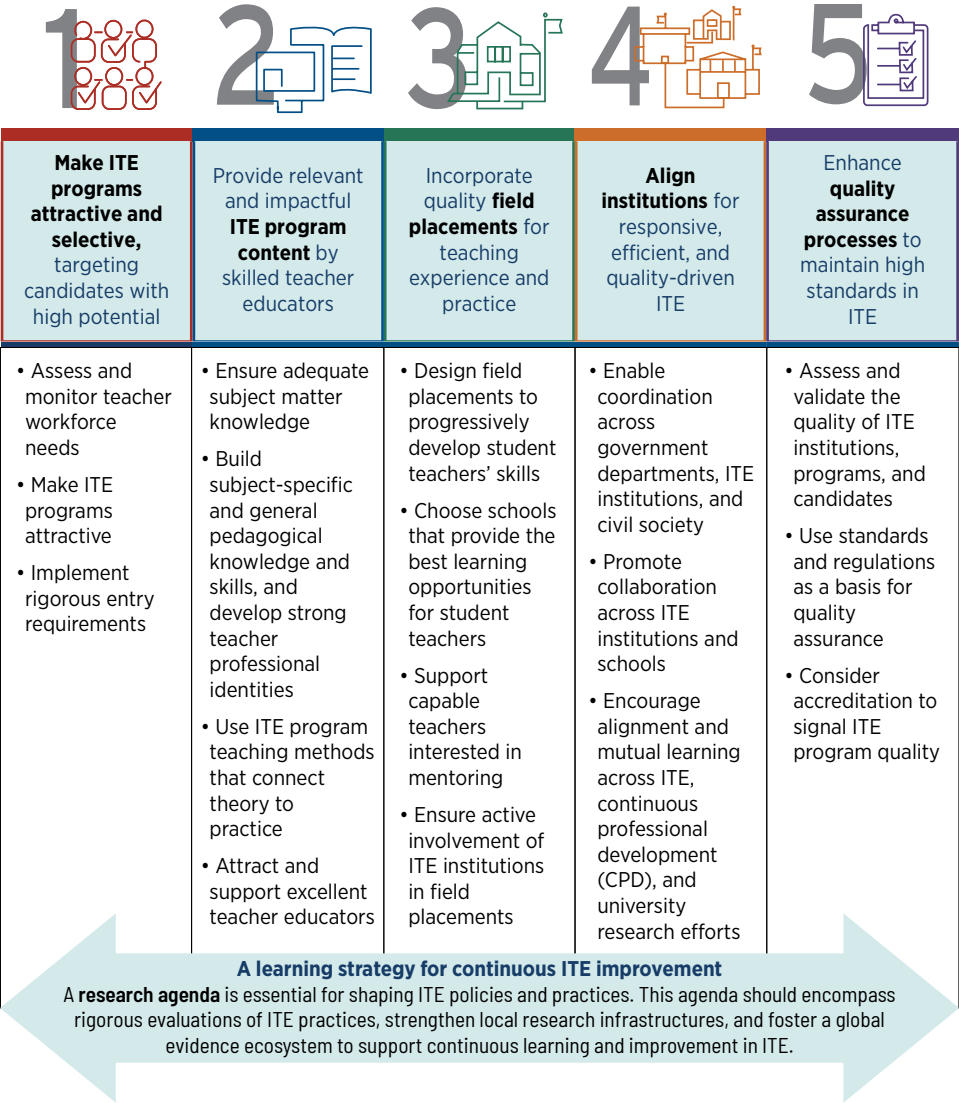
ITE serves as the foundation for teachers' lifelong professional learning, providing the core knowledge and skills for teaching, along with a strong professional identity. Globally, institution-based ITE (at teacher training colleges or universities) is the most common path to becoming a teacher. Strengthening the quality of these institution-based programs through sustained investments is essential for all countries to build and maintain a pipeline of well-prepared teachers. Figure 8.1 outlines the five key principles for building an effective ITE system identified in this study, along with related policy actions.

When facing specific challenges in the supply and preparation of teachers, policy makers may need to implement complementary short-term strategies while continuing to strengthen institution-based ITE programs. For example, when there are significant teacher shortages due to schooling expansion or problems with teacher attrition, policy makers may consider fast-track or emergency ITE programs to quickly meet demand and add remedial academic content to ITE programs as needed.

Where large numbers of practicing teachers did not complete ITE, short-term catch-up ITE programs may be needed, such as school-based or fast-track ITE programs. These time-bound programs should specifically target ITE content that recognizes teachers' experience and fills gaps.

Finally, in the case of an oversupply of teachers waiting for employment—which affects several countries—policy makers can consider introducing more rigorous criteria for entry into the teaching profession as well as improving the link between teacher workforce needs and ITE program openings.

Figure 8.1 Five Key Principles for Building an Effective ITE System



Source: Original figure for this publication.

Note: CPD = continuous professional development; ITE = initial teacher education.

Investments in Research to Maximize the Potential of ITE

Investments in an ITE evidence ecosystem should focus on three areas:

- Understanding what student teachers need to learn and how they learn best

- Conducting causal evaluations of effective ITE policies and programs
- Strengthening local research capability and data infrastructure to monitor and evaluate ITE reform.

Whereas the preceding chapters' discussion of each principle proposed future research questions, the section below outlines an overarching research agenda to ensure that policy makers have answers to the most crucial questions for strengthening ITE within the broader education system.

Research into What Student Teachers Must Learn and How They Learn Best

First, more international research is needed to determine what student teachers need to learn and how they can learn it best. This research should aim to develop a science of ITE that identifies the core knowledge and skills new teachers require to improve student learning. It should also identify the teacher educator pedagogies that are most effective in developing the core knowledge and skills.

Empirical research on quality field placements and practice-based teacher education has already begun to establish this body of knowledge in high-income countries. Replicating such studies in low- and middle-income countries can help strengthen and add nuances to this evidence base, ensuring its relevance across diverse contexts. The development and implementation of a science of ITE could mirror the advances seen in the science of reading, which over the past 50 years has led to significant improvements in the teaching of reading.

Rigorous Causal Evaluations of Effective ITE Policies and Programs

Second, more rigorous causal evaluations are needed to build a stronger evidence base on effective ITE policies and programs. These evaluations should prioritize areas where evidence is currently limited, such as ITE diplomas for experienced teachers, teacher certification, and ITE quality assurance systems. They should also focus on areas with high potential impact, such as quality field placements and practice-based teacher education.

Investments in these evaluations should include the use of standardized measurement tools and reporting procedures. This will facilitate the synthesis of findings from studies around the world, leading to more generalizable insights into what works, for whom, and in what contexts.

Research Capability and Data Infrastructure to Monitor and Evaluate ITE Reforms

Finally, investments in local research capability and data infrastructures are vital for providing policy makers and teacher educators with the information needed to monitor and evaluate ITE reforms (box 8.1).

These research and data infrastructure processes include collecting data on student teacher demographics, field placement quality, changes in knowledge and skills, and employment outcomes. Monitoring these quality inputs, processes, and outcomes can provide policy makers with real-time data to identify areas needing investment and improvement.

Box 8.1

Strengthening Local Research Capability to Support Continuous Improvement

Given limited investments in initial teacher education (ITE) across the world, teacher educators are often neither trained in research methods nor have the capacity to undertake rigorous research projects that support continuous improvement of ITE programs or policies. However, education authorities can partner with ITE programs to support research capability development, which in turn can be used to monitor and support improvements in teacher educator skills and ITE program delivery. Programs in Malawi and the Philippines provide relevant examples.

Malawi: Strengthening Teacher Education and Practice

The Strengthening Teacher Education and Practice (STEP) activity brought together the Malawian Ministry of Education and higher education institutions to improve ITE and continuous professional development of early-grade teachers. As part of STEP, over 250 teacher educators from 22 institutions have been trained in and completed participatory action research projects. These research projects have increased teacher educators' professional collaboration and supported program delivery improvements.

The Philippines: Advancing Basic Education in the Philippines

The Advancing Basic Education in the Philippines (ABC+) project brought together the Philippine Department of Education, local governments, and the private sector to support investments in addressing low learning outcomes in the Bicol and Western Visayas regions. As part of ABC+, teacher educators at Bicol University and Western Visayas University were trained in and completed participatory

(continued)

Box 8.1**Strengthening Local Research Capability to Support Continuous Improvement (*continued*)**

action research projects focused on early literacy instruction in nearby schools. These research projects generated contextually relevant local evidence that informed improvements in ITE delivery. The teacher educators have also incorporated their newly developed research skills into their master's and doctoral supervisory roles, supporting ongoing capability development in the region.

Sources: Schell, Lagata, et al. 2024; Schell, Marty, et al. 2024; USAID 2024.

Implementing a comprehensive monitoring system can be challenging, particularly in low-resource education contexts. However, there are opportunities to build such a system incrementally. For example, ITE programs could systematically collect data on applicants' demographics, prior experience, and motivations to teach, helping decision-makers understand the potential teacher labor market and identify where the most effective student teachers come from. This information can guide policy makers in targeting recruitment efforts to improve the quality of incoming student teachers.

Ultimately, education systems need the same capacities they expect of ITE candidates and practicing teachers: to ground decisions in the best available evidence, to evaluate their own practice rigorously, to experiment with improvement, and to verify that changes translate into better outcomes. Building these capacities requires monitoring systems that are technically sound, timely, and trusted, and that generate actionable feedback and enable course corrections. As monitoring improves, ITE can be continuously refined, and teachers can be better prepared to help students realize their full potential.

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Effective primary school teachers are the foundation of quality education. By instilling in children the skills that carry through further schooling, employment, and life, effective primary school teachers build a country's human capital and, over time, facilitate economic growth and shared prosperity.

How can education systems best equip teachers from the outset of their careers? The answer begins with initial teacher education (ITE), the foundation of teachers' lifelong professional learning. It provides aspiring teachers with the core knowledge and skills for teaching, as well as with a strong professional identity to prepare them for the demands of the classroom.

From Prospective to Prepared Teacher: A Global Study of Initial Teacher Education examines how ITE is delivered worldwide. It offers five guiding principles for countries seeking to strengthen teacher preparation:

- Making ITE programs attractive and selective
- Providing relevant content delivered by skilled teacher educators
- Incorporating quality field placements
- Aligning institutions for responsive and efficient ITE
- Enhancing quality assurance processes.

The report draws on detailed analysis of country experiences from Bahrain, Burkina Faso, Chile, the Dominican Republic, Finland, Ghana, India, Kenya, Morocco, Viet Nam, and Zambia—as well as examples from many additional countries—to demonstrate how decision makers can improve teacher preparation across different country contexts.



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