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4

A Review of the Literature:

Early Childhood Care and Education (ECCE)
Personnel in Low- and Middle-Income Countries

A Review of the Literature

Early Childhood Care and Education (ECCE) Personnel in Low- and Middle-Income Countries

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Executive Summary

I. Introduction

The past 15 years have witnessed worldwide recognition of the importance of investing in the early years of children's lives, with rapid expansion of Early Childhood Care and Education (ECCE) services around the world (UNESCO, 2015). However, progress in pre-primary coverage has not been experienced equally across regions and within countries, and delivering quality ECCE at scale remains a challenge in many contexts. The recent global education framework, Education 2030, includes a target focused on expanding equitable and quality provision, including one year of free and compulsory pre-primary education. The ability to recruit, retain, and support qualified personnel for ECCE settings is critical for ensuring that this target is met.

Evidence-based approaches are needed to address these challenges. Yet, limited information is available on ECCE teachers, including their training and professional development, classroom practices, and working conditions in low- and middle-income countries (LMICs) (UNESCO, 2012). This literature review seeks to synthesize existing evidence and identify knowledge gaps about pre-primary teachers in LMICs and the settings in which they work.

This literature review was commissioned to inform the development of a common survey instrument for the UNESCO pilot *Survey of Teachers in Pre-Primary Education* (STEPP) which will collect data on ECCE personnel in selected LMICs. The authors address three key questions:

1. What is the evidence on the relationship among personnel characteristics, the quality of ECCE services and child outcomes?
2. What are the training requirements, working conditions, setting characteristics of ECCE personnel in LMICs? What beliefs do these personnel hold?
3. What are the trends and main issues surrounding the above-mentioned characteristics and their implications for access and quality?

This review focuses on the characteristics and needs of personnel working in ECCE programs that meet the criteria of International Standard Classification of Education (ISCED) 0.2: pre-primary education covering children between ages 3 and 6. The authors focus on pre-primary teachers/educators whose primary responsibility is working directly with young children and use the term pre-primary teachers interchangeably with ECCE personnel, educators, and workers, even though these terms often have different understandings depending on the context. The geographic focus is on LMICs, with particular attention given to the following countries that were potential participants in the STEPP project at the time of this review: Dominican Republic, Egypt, Ghana, Kenya, FYR Macedonia, Malaysia, Moldova, Morocco, Mozambique, Namibia, Oman, the Philippines, Togo, Trinidad and Tobago, and Vietnam. Where appropriate, comparisons are made between developed and less-developed countries.

This literature review builds on and references reports from previous and ongoing initiatives, original research and academic studies, meta-analyses, literature and policy reviews, and technical reports at the international, regional, and country levels. The authors searched scholarly and online databases (e.g., Google Scholar, JStor, Proquest) for studies published between 2000 and 2015 that focus on the ECCE workforce and related policies, trends, and issues in LMICs. Search terms were associated with the following topics: (a) personnel supply; (b) personnel and setting characteristics; (c) professional development; (d) beliefs and pedagogical practices; and (e) working conditions and job satisfaction. The authors also conducted targeted searches of published and grey literature (including websites) for information on the workforce in the 15 potential STEPP pilot study countries listed above.

There are limited cross-national and consistent data on ECCE personnel in LMICs, often because governments do not systematically collect and disseminate data at the pre-primary level. Most available studies focus on structural-level as opposed to process-level information. There are few quasi-experimental and even fewer experimental studies focused on the relevance of ECCE personnel variables to program quality and children's outcomes globally. Moreover, the authors were unable to identify empirical studies focused on the relationship between the pre-primary workforce and access to ECCE provision. Additionally, despite the important role played by directors/managers and assistants in ECCE settings, there is limited information and research about the status, identity, and other related characteristics of these staff. These gaps in the literature and their implications are further explored in the conclusion.

II. The Relationship among Personnel, Quality, and Child Outcomes

Much of the evidence about the relationship among personnel, program quality, and child outcomes comes from studies in OECD countries, though there is a growing body of rigorous evidence about preschool program characteristics and the elements of quality associated with child development in LMICs. The authors use a basic model to illustrate the relationship among personnel, quality, and child outcomes (adapted from Fukkink & Lont, 2007), where structural quality (initial education, professional development, setting characteristics, working conditions) affects teacher competence (beliefs, skills, knowledge), which influences process quality (pedagogy, teacher behavior, interactions), and ultimately impacts child outcomes (development and learning).

Some of the existing evidence in LMICs illustrates that improvements in program quality and child outcomes are often correlated with better educated and trained teachers (Engle et al., 2011; Behrman et al., 2013; Rao et al., 2014), though it is difficult to identify the optimal duration and combination of initial education and professional development. Several studies have also found training to have positive effects on teacher behavior and interactions (Raikes, 2015; Behrman et al., 2013).

There is evidence from OECD countries that favorable structural characteristics, such as low child-staff ratios, improve both program quality and child outcomes and that poor working conditions can lead to high turnover rates (OECD, 2012; Eurofound, 2015). More evidence is needed about the relationship among structural characteristics, working conditions, and children's development in LMICs.

Teacher beliefs and perspectives about children's development and quality learning environments can influence the organization and practices in an early childhood setting and affect quality and child outcomes.

Teachers with more training and experience are more likely to hold child-centered beliefs and engage in similar pedagogical practices, which can be associated with better learning outcomes for children (Pianta, et al., 2005 in Raikes, 2015; Banu, 2014; Thao & Boyd, 2014).

III. ECCE Contexts: By Region, Location, and Institution

In order to understand the achievements and challenges of ECCE personnel in LMICs, it is important to have a contextual overview of the environments in which ECCE takes place. While all regions have seen some expansion in pre-primary enrollment, growth has been uneven and rates are still very low in some, such as Central Asia, the Arab States, and Sub-Saharan Africa (see *Figure 4*). Central and Eastern Europe, Latin America and the Caribbean, and East Asia and the Pacific have relatively strong ECCE coverage, but face challenges in including more marginalized populations (UNESCO, 2009, 2010; Southeast Asian Ministers of Education Organization [SEAMEO], 2015). Access to and quality of ECCE services can vary dramatically within country contexts, as pre-primary programs tend to be more heavily concentrated in urban areas (ILO, 2012). Rural areas may have a shortage of teachers due to challenges in recruiting and retaining personnel, particularly those who are qualified. The private sector, while nearly absent in some regions (Central and Eastern Europe, Central Asia), is a significant, and at times dominant provider of ECCE services, particularly in regions with low overall access (such as the Arab States and peri-urban areas of major cities in Sub-Saharan Africa) (see *Figure 5*). Private settings can be for-profit as well as run by NGOs, churches, and individuals, and are often difficult to monitor and regulate.

IV. ECCE Personnel Trends in Low- and Middle-Income Countries

The ECCE workforce is younger than teachers at other educational levels in LMICs, and predominantly female (see *Figures 7 and 8*). Pre-primary education is increasingly integrated into primary schools and as a part of the formal schooling system in order to increase access, though this does not necessarily lead to parity in training and working conditions between pre-primary and primary teachers. Other early childhood settings can be very diverse, however, and vary in levels of formality. Both across and within countries, pupil-teacher ratios (PTRs) can vary greatly (see *Figure 9*). Large PTRs can often be due to a shortage of personnel, particularly in rural areas.

Compared to OECD countries, many LMICs do not require pre-primary teachers to receive a tertiary education. Many ECCE teachers do not meet the national minimum requirements which can lead to a shortage of qualified teachers and have implications for access and quality (see *Figure 11*). Particularly in rural areas, private settings, and non-formal programs, teachers tend to have lower qualifications without specialization in ECD or education.

Though teachers' beliefs around different topics inform pedagogical practices and are key factors in preschool quality, there is currently no tool in place to collect cross-country data on teachers' beliefs and pedagogical practices. Available studies indicate that teachers' beliefs may vary greatly about what children should learn, and trained and qualified teachers tend to support child-centered learning and practices.

Although most teachers in LMICs tend to have access to in-service training, the duration, frequency, and relevance varies greatly and few countries seem to mandate participation, especially compared to many developed countries (OECD, 2014). Despite overall weak in-service and professional

development opportunities, some good practices do exist (see *Figure 13*). Training and accreditation can be implemented by governments at the national, regional, and local levels depending on the structure of the education system. In addition, some independent foundations, NGOs, and institutions of higher education have sought to fill gaps in both pre-service and in-service training. Many ECCE practitioners, both in OECD countries and LMICs, do not have the proper training, resources or support for children with special needs and who come from diverse backgrounds.

Overall, the status, pay, and benefits for ECCE personnel are poorer than those of primary teachers which can lead to low job satisfaction and retention rates (see *Figure 14*). While official working hours may be similar to those of primary school teachers, few developing countries currently pay teachers for planning and preparation outside of the classroom. Staff working in the private sector in OECD countries and LMICs tend to have lower pay as the sector does not always guarantee the same wages and other benefits as public positions (Sun et al., 2015).

Despite what the many trends and challenges included in this review may illustrate about the ECCE workforce, the field lacks good data as a result of poor monitoring and evaluation practices. Those responsible for monitoring ECCE practices make relatively fewer visits to rural and remote areas, often where there are educational settings most in need of support. There is a shortage of staff who are trained and qualified to monitor personnel, and systematic monitoring and evaluation becomes more difficult due to the inherent diversity of ECCE programs, where services can be formal or non-formal, serve a variety of ages, and operate using many different funding mechanisms (Sun et al., 2015).

V. Conclusion and Implications for the STEPP Project

Though the situation can vary greatly depending on country context as well as on characteristics of ECCE settings, there is generally a disconnect between the political discourse around the importance of early learning and the actual support provided to pre-primary teachers in many developing countries. There is a need for more complete and consistent cross-national data about the early childhood workforce, including those working in the private sector and in less formal arrangements. This review surfaced several knowledge and evidence gaps for which a number of research questions are included to help guide future data collection, research and evaluation.

The STEPP Project provides the opportunity to collect important and often unknown information on the current capacity, practices, and needs of pre-primary teachers that are relevant to access to and quality of ECCE provision in low-resource contexts. These country-level and cross-national comparative data will provide valuable guidance to policymakers seeking to better understand and support ECCE professionals and their work with young children. The list of pilot countries at the time of this review was quite diverse, according to an initial desk review, and will further elucidate many of the trends and issues that were identified in this review and likely identify others (summarized in *Figure 15*). Significant findings for this specific set of countries include:

- ▶ A wide variation of minimum academic qualifications level required to work as pre-primary teachers. Some countries do not have any specified standards or minimum requirements. In other countries, teachers are only required to hold a lower secondary qualification and undergo very brief training.
- ▶ A highly uneven gender balance in the pre-primary workforce with a high

proportion of female workers. Namibia is an exception where women comprise only one-third of ECCE teachers.

- ▶ A wide range of PTRs, with most countries falling within the range of 10:1 to 30:1.
- ▶ Differences in working hours across countries and data are unavailable in a number of countries. Some countries do not differentiate between teaching hours and extra-curricular activity hours and may result in higher total working hours.
- ▶ Private sector provision is high in countries with more than 75 percent of pre-primary enrollment in the Arab States including Morocco and Oman. Macedonia and Moldova have relatively small private sectors, which corresponds well to the strong public sector in Central and Eastern Europe.

Based on this review and a consideration of other surveys of teachers, the authors recommend a series of indicators for inclusion in the STEPP Project around four policy areas: preparing and developing pre-primary education personnel; ensuring quality learning environments and practices; attracting, motivating, and retaining pre-primary personnel; and understanding the characteristics of personnel and the settings where they work. The following criteria were considered: (a) relevance for quality; (b) relevance for access; (c) data lacking in LMICs; and (d) contextual data (see *Figure 16* for the full list of indicators). While not the main focus of the review, the authors identified three lessons for the scope and methodology of the STEPP project:

1. It is important to sample personnel from urban and rural, public and private (both for-profit and non-profit), and formal and non-formal settings.

2. If resources permit, conduct an observational study of a sub-set of pre-primary teachers to compare reported and actual processes.

3. While many of the challenges teachers and children in LMICs face are not entirely distinct from the issues within ECCE in OECD and higher income countries, they are often more pronounced in these contexts. Many of these children and teachers are dealing with poverty, violence, poor health and nutrition, and social and economic marginalization. Any survey piloted in these contexts needs to provide opportunities to capture the diversity and inequality inherent to these populations.

At the core of improving access and quality ECCE is developing competent, well-trained, and well-supported teachers. Yet, information on ECCE personnel, especially in LMICs, is often limited and inconsistent within and across countries. Bridging the data gap through systematic collection and dissemination of information on ECCE personnel training, working conditions, beliefs, and practices can help illuminate challenges where focused attention and investment are most needed. These insights will shed light on current and potential needs that can guide future resources toward supporting teachers and their well-being so they can create the best development and learning environments for children.

I. Introduction

A. Background and Rationale

The past 15 years have witnessed worldwide recognition of the importance of investing in the early years of children's lives, with rapid expansion of Early Childhood Care and Education (ECCE) services around the world (UNESCO, 2015). At least 68 countries have national early childhood policy instruments and another 23 countries have instruments under development (Vargas-Baron, 2015). Pre-primary enrollments increased by nearly two-thirds between 1999 and 2012, reaching a world gross enrollment rate of 54 percent (UNESCO, 2015). Yet this progress in pre-primary coverage has not been experienced equally across regions and within countries, and delivering quality ECCE at scale remains elusive in many contexts. For example, only 17 percent of children in low-income countries have access to pre-primary education, and there are persistent disparities in children's early development and learning experiences according to their family's socio-economic backgrounds and whether they live in rural or urban areas (Neuman & Hatipoglu, 2015).

Positive pressure on countries to expand access and improve quality of ECCE services is likely to further increase in the coming years, with a new target in the recent global education framework, Education 2030, focused on expanding equitable and quality provision, including one year of free and compulsory pre-primary education. The ability to recruit, retain, and support qualified personnel for ECCE settings is critical for ensuring that this target is met. Previous reviews

have identified many challenges facing the early childhood workforce, including inadequate professional development and mentoring, low salaries, and lack of support and recognition (International Labour Organisation [ILO], 2012; Schaeffer, 2015; Sun, Rao, & Pearson, 2015; UNESCO, 2015).

Evidence-based approaches are needed to address these challenges. Yet, limited information is available on ECCE teachers, including their training and professional development, classroom practices, and working conditions in low- and middle-income countries (LMICs) (UNESCO, 2012). Existing data tend to focus on easier-to-measure indicators of structural quality, such as class size, child-teacher ratios, teacher education and training, and much less on indicators of process quality, such as the pedagogical approaches used in early childhood settings and the nature of the interactions between children and teachers (Myers, 2006; UNESCO, 2006). This literature review seeks to synthesize what is currently known and identify knowledge gaps about pre-primary teachers and the settings in which they work in developing countries.¹

B. Scope

This literature review was commissioned to inform the development of a common survey instrument for the UNESCO pilot *Survey of Teachers in Pre-Primary Education* (STEPPE)

¹ The authors would like to thank Hina Baloch and Max Gollin for their research support.

which will collect data on ECCE personnel in selected low- and middle-income countries. The goal of the STEPP project is to inform national policies on ECCE personnel development for improving the access and quality of pre-primary education. We review what is currently known about the ECCE workforce in low- and middle-income countries, identify trends and issues, and highlight gaps in the literature to be addressed by future research.

This literature review focuses on the characteristics and needs of personnel working in ECCE programs that meet the criteria of International Standard Classification of Education (ISCED) 0.2: pre-primary education covering children between ages 3 and 6. We focus on pre-primary teachers/educators whose primary responsibility is working directly with young children. We use the term pre-primary teachers interchangeably with ECCE personnel, educators, and workers, even though we understand that these terms have different understandings in different contexts.

Given that the majority of research and reviews on ECCE personnel has been conducted in OECD and other higher-

income countries (e.g. Organisation for Economic Co-operation and Development [OECD], 2012; Urban, Vandenbroeck, Peeters, Lazzari, & Van Laere, 2011; Oberhuemer, Schreyer, & Neuman, 2010; US Department of Education, 2010), the geographic focus of this review is on low- and middle-income countries. We accord particular attention to the following countries that were potential participants in UNESCO's STEPP project at the time of this review: Dominican Republic, Egypt, Ghana, Kenya, FYR Macedonia, Malaysia, Moldova, Morocco, Mozambique, Namibia, Oman, the Philippines, Togo, Trinidad and Tobago, and Vietnam. Where appropriate, comparisons are made between developed and less-developed countries.

C. Review Methodology

Search strategy: This literature review builds on and references reports from previous and ongoing initiatives, original research and academic studies, meta-analyses, literature and policy reviews, and technical reports at the international, regional, and country levels.

Key questions this literature review seeks to address:

1. What is the evidence on the relationship among personnel characteristics, the quality of ECCE services and child outcomes?
2. What are the training requirements, working conditions, setting characteristics of ECCE personnel in low- and middle-income countries? What beliefs do these personnel hold?
3. What are the trends and main issues surrounding the above-mentioned characteristics and their implications for access and quality?

Figure 1: Sources

Source type	Example sources
Previous and ongoing initiatives	<ul style="list-style-type: none"> ILO Policy Guidelines on the Promotion of Decent Work for Early Childhood Education Personnel OECD International Early Childhood Education and Care Staff Survey OECD Teaching and Learning International Study (TALIS) UNESCO-SEAMEO Pre-primary Teacher Project UNESCO Regional Strategy on Teachers UNESCO Institute for Statistics (UIS) surveys World Bank SABER-Early Childhood Development
International organizations	<ul style="list-style-type: none"> • IDB • OECD • UN agencies, including UNESCO (particularly the recent GMR and its background papers) and ILO • World Bank
Regional early childhood networks	<ul style="list-style-type: none"> • Asia-Pacific Regional Network for Early Childhood (ARNEC) • International Step by Step Association (ISSA)
Prominent NGOs and foundations	<ul style="list-style-type: none"> • Aga Khan Foundation • Bernard van Leer Foundation • Save the Children
Peer-reviewed academic journals	<ul style="list-style-type: none"> • <i>Child Development</i> • <i>Early Childhood Research Quarterly</i> • <i>International Journal of Child Care and Education Policy</i> • <i>International Journal of Early Years Education</i> • <i>Journal of Early Childhood Teacher Education</i>

Selection criteria: We searched scholarly and online databases (e.g., Google Scholar, JStor, Proquest) for studies published between 2000 and 2015 that focus on the ECCE workforce and related policies, trends, and issues in low- and middle-income countries. We used search terms associated with the following topics: (a) personnel supply; (b) personnel and

setting characteristics; (c) professional development; (d) beliefs and pedagogical practices; and (e) working conditions and job satisfaction. We also conducted targeted searches of published and grey literature (including websites) for information on the workforce in the 15 potential STEPP pilot study countries.

Figure 2: Search terms

Topic of study	Search terms
Personnel supply	Supply; recruitment; attraction and retention; turnover; monitoring
Personnel and setting characteristics	Staff; personnel; workforce; teachers; workers; educators; instructors; caregivers; practitioners; teaching assistants; principals; center administrators; managers; directors; characteristics; qualifications; skills; capacities ; quality framework; settings; pedagogical and classroom environment
Professional development	Initial training; pre-service training; continuous training; in-service training; upgrading; professional development; capacity development
Beliefs and pedagogical practices of personnel	Teaching; pedagogical beliefs; motivation; pedagogical practices; professional practice; curriculum knowledge
Working conditions and job satisfaction	Working conditions; status; level; compensation; structure

D. Study Limitations

Although our search was extensive, it was challenging to find consistent, cross-national data on ECCE personnel in low- and middle-income countries. The paucity and unevenness of data arise from the fact that many LMICs do not systematically collect and disseminate pre-primary data as they do at the primary education level. Even when available, studies focus on structural-level information, such as teacher-child ratios and the percentage of teachers who have undergone formal training, as opposed to process-level information, such as interactions between teachers and children. There are few quasi-experimental and even fewer experimental studies focused on the relevance of ECCE personnel variables to program quality and children's outcomes globally, and a particular lack of information on certain developing regions (e.g., Arab States, Central Asia). Moreover, we were unable to identify empirical studies focused on the relationship between the pre-primary workforce and access to ECCE provision.

Additionally, we recognize the importance of the roles played by directors/managers and assistants (often interchangeable with terms such as paraprofessionals or auxiliary staff) in ECCE settings. Managers play an important part in providing favorable working conditions and ongoing professional development support to teachers (OECD, 2012). Assistants can fulfill the learning needs of young children by playing teaching, bridging (among school, families, and communities), and caring roles and allowing teachers to focus on learning processes (van Laere, Peeters & Vandenbroeck, 2012). In both developed and less-developed countries, however, there is limited information and research about the status, identity, and other related characteristics of managers and assistants. Our review, therefore, does not focus on these roles. These gaps in the literature and their implications, however, are explored further in the final section of this report.

E. Roadmap for the Report

Section II focuses on what is known about the relationship between key constructs or themes of the early childhood workforce (e.g., personnel characteristics, education and training, pedagogical practices, and working conditions) and quality of ECCE programs and child outcomes. Section III reviews global and regional trends in ECCE provision to contextualize the discussion around the workforce and its challenges. Section IV identifies trends and issues related to staff training and professional development, working conditions, and beliefs with a particular focus on the situation in low- and middle-income countries. Throughout this review, comparisons are drawn with ECCE personnel in both developing and developed contexts as well as between pre-primary and primary education staff. We conclude with a discussion of the implications of this review and analysis for the development of the STEPP survey, and emphasize the importance for any survey to have a respect for the diversity inherent to ECCE systems and cultures in these targeted contexts.

II. The Relationship among Personnel, Quality, and Child Outcomes

Personnel and ECCE program quality affect child outcomes, but evidence is concentrated in OECD countries

There is broad global consensus on the critical importance of investing in quality ECCE programs. Early intervention is crucial for children's cognitive, socio-emotional, language, and physical development during the early childhood years, as well as for their subsequent learning and development; these early investments also improve the efficiency and effectiveness of education systems (Britto, Engle, & Super, 2013; Naudeau, Kataoka, Valerio, Neuman, & Elder, 2011; Neuman & Devercelli, 2012; UNESCO, 2006, 2015; Yoshikawa & Kabay, 2015). In the past, there has been greater focus on increasing *access* to ECCE services, particularly for vulnerable and disadvantaged children. However, there is increasing recognition of the importance of the *quality* of ECCE programs and concern that when programs of low quality are provided, they are unlikely to generate intended child outcomes and may even do more harm than good (Britto, Yoshikawa, & Boller, 2011; Yoshikawa & Kabay, 2015). Many countries around the world are now focusing their attention on both increasing access to *and* strengthening ECCE programs through defining, improving, and monitoring quality in ECCE (Neuman & Devercelli, 2012; Raikes, 2015). Although understandings and definitions of quality vary across contexts and cultures (e.g., Nsamenang, 2008; Dahlberg, Moss, & Pence, 1999), most systems focus on *structural quality* – staff education and training; working conditions

(such as health and safety of facilities); setting characteristics (such as ratios and group sizes) – and much less on *process quality* – stimulation and interactions between adults and children (Myers, 2006).

In early childhood, perhaps even more than in other periods of the life cycle, children develop and learn through their interactions with adults and peers (Naudeau et al., 2011). Evidence from a variety of contexts points to the importance of adult-child interactions to young children's development and learning (Aga Khan Foundation [AKF], 2010; Leyva, Weiland, Barata, Yoshikawa, Snow, Treviño, & Rolla, 2015; Myers, 2006; UNESCO, 2006). Several recent international reviews highlight the importance of teachers as key determinants of quality ECCE (ILO, 2012; Raikes, 2015; UNESCO, 2015). Pre-primary teachers who are well-trained and equipped with the right knowledge, skills, and conditions are more likely to support age- and developmentally-appropriate practices, including the rich reciprocal interactions and content teaching that positively influence children's socio-emotional development, language development, and cognitive skills. Therefore, investment in pre-primary teachers' initial formal education, practical in-service training, and ongoing mentoring and coaching is paramount to achieving quality in ECCE programs (Raikes, 2015; Yoshikawa & Kabay, 2015).

There is a small, but growing body of rigorous evidence about preschool program characteristics and the elements of quality associated with child development in low-

Key takeaways from literature on OECD and high-income countries

Much of what we know about the relationship among ECCE personnel, quality, and children's development and learning comes from higher-income countries. Staff qualifications, including both initial education and continuous professional development, contribute to enhancing process quality, which is highly associated with better child outcomes (OECD, 2012). Specifically, correlational studies have found that the number of years of education and specialized training are significant and strong predictors of sensitive and stimulating teacher-child interactions and global quality ratings (Fukkink & Lont, 2007).

Studies also indicate the importance of follow-up once teachers get into the classroom, especially among new teachers or those without previous professional development experience (Sheridan, Giota, Han, & Kwon, 2009). There is some evidence from the US that professional development is equally as important, if not more so, as initial education and that all forms of training need to combine both theory and practice (Early et al., 2007). Targeted training that integrates information about child development with coaching within classrooms has been shown to be more effective than education about child development alone (Raikes, 2015). Several studies have shown that intensive training paired with video feedback is effective in the development of children's language and cognition. In the longer term, coaching in the form of reflection groups are found to be useful in sustaining program quality and children's outcomes in the longer term even within resource-constrained settings where teachers have lower qualifications (Eurofound, 2015). A meta-analysis of studies, primarily from the US, found that specialized training with a focus on interactions with young children had a statistically significant

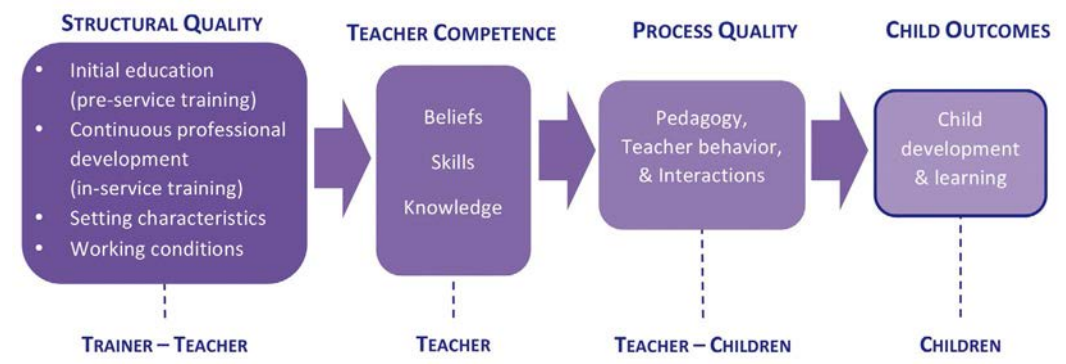
effect on teachers' knowledge, attitudes, and skills and training programs with a specific curriculum had larger effects on professional practices than those that were open in content. The impact of training on children's development was positive but not statistically significant, which supports correlational research that improved training leads to changes in pedagogy which leads to improvements in child outcomes (Fukkink & Lont, 2007).

Certain structural variables related to personnel have been found to be important for the quality of ECCE services in OECD countries: i) a high staff-child ratio and low group size; ii) competitive wages and other benefits; iii) reasonable schedule/workload; iv) low staff turnover; v) a good physical environment; and vi) competent and supportive center management (OECD, 2012). The relative importance of each of these variables is debated. For example, correlational research suggests that education and training are better predictors of quality ECCE than teacher age, work experience, professional status or stability, mental health or other characteristics (Fukkink & Lont, 2007). A few US studies have found that formal education and training are stronger and more robust predictors of quality than adult-child ratio and group size (see Fukkink & Lont, 2007 for a review). However, in practice, structural and process variables often work together to produce quality. For example, in the US, preschool programs with well-educated, adequately paid teachers, small classes with no more than 20 children, and reasonable staff-child ratios (less than 1:10) produced strong short- and long-term educational gains for children. In contrast, preschool programs with fewer resources have often failed to achieve similar results (Barnett, 2008).

and middle-income countries (e.g. Engle et al., 2011; Behrman, Engle, & Fernald, 2013; Rao et al., 2014; Yoshikawa & Kabay, 2015). This literature points to the importance of child-centered methods adapted to the learning styles of young children, teacher training, and clearly-defined interventions (Behrman et al., 2013). The rest of this section reviews the evidence on how personnel variables relate to access to quality in ECCE, as well as to child outcomes, with a focus on low- and middle-income countries. We organize the section around four groups of key constructs that are relevant to access and quality: (a) initial teacher preparation

and professional development; (b) personnel and settings characteristics; (c) working conditions; and (d) teacher beliefs and pedagogical practices (Britto et al., 2011; Myers, 2006; Raikes, 2015; World Bank, 2013). The first three groups pertain to the structural quality of ECCE settings (see *Figure 3*), where the majority of research and data is available. The last grouping around beliefs and pedagogical practices reviews what limited evidence does exist around the impact of teacher competence on process quality and, to a limited extent, child outcomes.

Figure 3: Model of the relationship among personnel, program quality, and child outcomes in ECCE settings



Adapted from Fukkink & Lont, 2007

A. Teacher Preparation and Professional Development

The duration and intensity of teacher training can have significant effects on children’s learning

Studies consistently point to the importance of well-trained teachers to ECCE program quality in developing countries (Engle et al., 2011; Behrman et al., 2013; Rao et al., 2014), though it is often difficult to disentangle teacher variables from a comprehensive package of interventions (Behrman et al., 2013). A large observational study of preschools in ten countries (Finland, Greece, Hong Kong, Indonesia, Ireland, Italy, Poland, Spain, Thailand, and the United States) found that children attending preschools with teachers with more education were more

likely to have higher language scores at age 7 (Montie, Xiang, & Schweinhart, 2006). A recent systematic review of 111 studies found evidence from several developing countries including Bangladesh, China, and Costa Rica, that qualifications and training of teachers (referred to as “change agents”) in preschools are significantly associated with both program quality and children’s cognitive outcomes (Rao et al., 2014). Although the level of education and training varied in these studies, many of the teachers had received at least secondary education and many also participated in ongoing training once they started work in the field. The intensity and duration of pre-service training seem to matter. For example, there is evidence from Cambodia that longer pre-service training has stronger effect sizes on children’s learning (Rao et al., 2014). Professional development incorporating

on-site observation and coaching have also been found to be important (Yoshikawa & Kabay, 2015).

Training can improve teacher behavior and interactions

Several studies have found positive effects of training on teacher behaviors. For example, the “Incredible Years” teacher training program in Jamaica offered 7 full-day teacher workshops (one day per month) focused on skills for classroom engagement, effective management, and strategies to promote socio-emotional development and provided hand puppets and visual aids. In a small study of three interventions and two comparison preschools, children who participated in 14 sessions were rated as having higher “interest” and “enthusiasm”, and their teachers spent more time promoting social and emotional skills (Baker-Hennigham et al., 2009 in Behrman et al., 2013). The relationship between teacher behavior and child outcomes is complex. In Chile, a large, cluster-randomized study of Un Buen Comienzo – which provided 18 training sessions, instructional strategies, and bimonthly continuous coaching to teachers in public preschools over two years – demonstrated significant improvements in classroom level outcomes and teacher-child interactions, including on dimensions of emotional and instructional support and classroom organization. However, the quality improvements did not translate into statistically significant impacts on children’s language or literacy skills, leading the authors to conclude that more intensive curricular approaches may have been needed (Yoshikawa et al., 2015).

Children do better in settings (whether formal or informal) with better trained teachers

Teacher qualifications may be as important as the type of ECCE setting children attend (formal or informal), although it is important to note that more formal preschools tend to employ better educated workers. A study in Peru compared children in preschools with

formally educated, paid teachers with those attending poorer-resourced community-based programs with volunteer, untrained teachers. Children with better trained teachers performed better in math and language in the first year of primary school, and they were more likely to attend the appropriate grade for their age at follow-up (Myers, 2006). Other data suggest that community-based preschool education with trained early childhood educators can have positive effects. A study in Cambodia compared children attending formal state preschool, community-based preschools, home-based preschool and children with no preschool. As in the study in Peru, children in formal preschools performed better than those in the other three groups. However, the researchers found no significant differences between home-based and center-based community programs; children attending both types of less formal settings outperformed the control group (Rao, Sun, Pearson, Pearson, Liu, Constan, & Engle, 2012).

Limited evidence to determine the specific aspects of teacher training that impact child outcomes

While there is consensus that well-trained teachers are essential to quality ECCE which promotes children’s development, there is limited evidence on what level, content, and organization of teacher training and professional development – pre-service, in-service, or combination – are most effective for quality improvement in low-resource contexts (Raikes, 2015). One challenge to identifying the key features of effective teacher training and professional development from the literature is that many interventions seek to change several aspects of preschool quality at once (e.g., facilities, teacher training, curriculum, materials, access to media, etc.) making it difficult to disentangle which component yields the most benefits (Behrman et al., 2013)

B. Personnel and Settings Characteristics

The roles, titles, and demographic characteristics of personnel are diverse

There is a range of professional profiles for those who work with young children, which reflects a variety of approaches to preparation and support as well as the historical background and current orientation of ECCE services (e.g., school readiness, child care, early intervention). This diversity in roles is reflected in various terms used to describe its personnel, including early childhood and pre-primary teachers, directors and administrators, pedagogues, nursery workers, day-care staff, auxiliary personnel, and volunteer helpers. In ECCE settings in many developing countries (e.g., Ghana, Namibia, Philippines), a lead teacher is supported by an assistant or volunteer. Although less common, staff in some ECCE programs provide integrated education, nutrition, and health services (e.g., Anganwadi workers and helpers within the Integrated Child Development Services in India). In Eastern Europe (e.g., FYR Macedonia) and some countries that were part of the Soviet Union, a range of specialists are available to support the main kindergarten teachers, including pedagogues, psychologists, speech therapists, music teachers, social workers (OECD, 2012; UNESCO IBE 2006b, 2006c, 2006d, 2006f).

Demographic variables of personnel such as age, gender, mother tongue, and ethnicity are important to understanding the composition of the early childhood workforce and the extent to which they are as diverse as the children enrolled in the program (e.g., Ball, 2011; Schaeffer, 2015). While personnel characteristics are often found to be less important for quality ECCE than education and training qualifications in high-income contexts, more research is needed in developing countries to better

understand the interplay among staff backgrounds, training, and practices.

Setting characteristics impact program quality, but more evidence in low-income contexts is needed

Similarly, pre-primary personnel work in diverse settings, ranging in formality and structure, and including both private and public provision. Some of the key settings variables include: i) physical features of the classroom, such as safety and design infrastructure, ii) availability, accessibility, and variability of age and development-appropriate materials, and iii) structural features, such as appropriate teacher-child ratios for the age group in the classroom (Britto et al., 2011). In OECD countries, higher staff-child ratios generally are associated in correlational studies with better quality including better staff-child interactions, less stress for staff, and better child development. Smaller group sizes also seem to have a positive effect on staff-child and staff-parent relationships in OECD countries (OECD, 2012). However, a systematic review of working conditions in ECCE by Eurofound (2015) found that while higher staff-child ratios in Sweden had positive effects on the quality of pedagogical practices and on staff-child interactions, no significant effect was found on child outcomes (Palmerus, 1996; Sundell, 2000). The IEA Preprimary Project did not find a relationship between group sizes and children's cognitive development in the 10 participating countries (Montie et al., 2006). More research is required to establish the effect of these variables on child outcomes, especially in low-resource contexts where lower staff-child ratios and larger group sizes are typically found. As noted above, there is evidence that quality ECCE can occur in both formal and informal settings (Rao et al., 2014).

C. Working Conditions and Job Satisfaction

Low wages and other poor working conditions can lead to low job satisfaction and high turnover

The ability of ECCE personnel to support quality early learning experiences of young children is influenced not only by their education level, training, and setting characteristics but also by employment-related factors, such as their working environment, salary and non-financial benefits, and professional status. Working conditions have an impact on pre-primary teachers' job satisfaction, which in OECD countries, is strongly associated with positive, stable, and stimulating interactions between adults and children in ECCE settings (OECD, 2012). Centers with poor working conditions (e.g. those characterized by long hours, limited resources, and poor leadership) may have a harder time attracting and retaining quality candidates, resulting in high staff turnover rates. Turnover rates are also linked to poor remuneration. Staff turnover, which has been reported to be as high as 40 percent in some developing countries such as Kenya (Hein & Cassirer, 2010), creates inefficiencies in the education system; training staff becomes a costly, "revolving door." More importantly, this instability may have a negative effect on ECCE quality by disrupting trusted relationships formed between teachers and children (and parents). In the US, there is evidence that high turnover rates linked to low wages of the early childhood workforce negatively affects children's language and socio-emotional development (OECD, 2012).

Remuneration is a reflection of the status and attractiveness of the ECCE profession

Staff salaries also reflect the overall investment in and priority of ECCE in a given society, and low wages reinforce public perception that working with young children is a low status profession (ILO, 2012; Shaeffer, 2015). Remuneration is a

good indication of the attractiveness of the ECCE profession and may affect individual teachers' motivation and job satisfaction (again linked to turnover). Low salary for ECCE personnel may deter qualified and committed individuals from entering the profession (OECD, 2012).

Although there are (uneven) data identifying poor salaries, working conditions and job satisfaction in many low- and middle-income countries as well as associated high staff turnover rates (see Section IV), there is limited empirical evidence on the relationship between these factors and the quality of ECCE provision in developing contexts. Globally, including in OECD countries, more research is needed on the relationship between staff remuneration and working conditions on child outcomes (OECD, 2012).

D. Teacher Beliefs and Pedagogical Practices

Child-centered beliefs and teaching practices can improve program quality and child outcomes

Pre-primary teacher beliefs and actual pedagogical practices are two critical dimensions to ensuring quality learning environments for young children. Teacher beliefs and perspectives about children's development and quality learning environments can influence the organization and practices in an early childhood setting and affect quality and child outcomes. What types of pedagogical practices are important for quality ECCE? Available studies in both developing and developed countries underscore the importance of teachers' curriculum knowledge and ability to translate their understanding of child development to form warm, responsive, and enduring relationships (Gialamas et al., 2013; Mtahabwa and Rao, 2010; Naudeau et al., 2011). Research in the US has found that effective teachers hold "child-centered" beliefs that emphasize

the child's role in decision-making and de-emphasize obedience and adult control (Pianta, et al., 2005 in Raikes, 2015). There is increasing focus in curricula and training on child-centered approaches, including those fostering children's play as a means to improve quality, and trained teachers are more comfortable shifting their practices (Banu, 2014; Thao & Boyd, 2014).

The effectiveness of pedagogical practices, however, can be negatively influenced by other constructs such as large group sizes, undertrained staff, and competing teacher beliefs. A study in Chile found that pre-primary teacher use of child-centered approaches and small group activities was constrained by space issues (i.e., small classrooms) as well as by cultural attitudes toward group instruction and children's independence (Leyva et al., 2015). This points to the need for cross-cultural research on pedagogical beliefs and practices in diverse contexts (Raikes, 2015).

Examples of child-centered pedagogical practices

- ▶ For more than 20 years, the Madrasa Preschool Program in Kenya, Uganda, and Zanzibar has trained and supported women from the local community to employ child-centered approaches and use locally-available materials in preschools. Quasi-experimental evaluations have found that these programs had better quality compared to more traditional, teacher-directed preschools; participating children performed better on cognitive assessments (Mwaura et al., 2008).
- ▶ In Lam Dong, Vietnam, the Education Development Strategic Plan (2001-2010) stimulated curriculum and pedagogical changes that shift from a more rigid, traditional approach to an integrated one centered around the child's learning and development (Thao & Boyd, 2014).
- ▶ Across all 10 countries in the IEA Preprimary Project (cited earlier), children had better language and cognitive performance at age 7 if they were given a greater number of free-choice activities during preschool and spent less time in whole-group activities and more time in smaller groups (Montie et al., 2006).

Training can help shape teacher beliefs that affect pedagogical practices in the classroom

In developing contexts, there are studies indicating that training can help shape teacher beliefs as well as their capacity to translate these beliefs into activities with children. For example, in Jordan, teachers with less training and experience were more likely to hold traditional and authoritative beliefs in favor of teacher-directed approaches (Betawi, 2010). In Lam Dong province in Vietnam, early childhood teachers trained with a "strong theoretical

framework” around child-centered learning felt more confident about implementing the pedagogy than less-qualified teachers (Thao & Boyd, 2014).

Training can also lead to positive interactions with children, parents, and less-qualified staff

Interaction and communication with children, parents, and other professionals are also critical factors of quality. High-quality pedagogy relates to the way in which staff engage children, scaffold their learning, and stimulate interactions with other children. The importance of supportive and reciprocal interaction between teachers and children is well established (AKF, 2010; Raikes, 2015; Myers, 2006; UNESCO, 2006; Britto et al., 2011), even though teacher-child interactions have not yet received as much research attention in developing countries as in the developed world (Raikes, 2015). Better qualified personnel employ pedagogical practices which foster quality learning environments and better learning outcomes for children, and the benefits of their training may also spill over into the practices of other staff in the center. In the EPPE study in the UK, higher qualified staff positively influenced the behaviors of lower-qualified staff working beside them (Siraj-Blatchford, 2010 in OECD, 2012).

E. Summary and Key Takeaways

- ▶ As in OECD countries, experimental and quasi-experimental studies in low- and middle-income countries tend to find that quality ECCE programs that yield improved child outcomes are more likely to have staff who are better trained in child development and receive more professional development, including onsite coaching.
- ▶ Improvements in quality associated with better educated and trained preschool teachers typically (but not always)

translate into better child development and learning outcomes.

- ▶ It is difficult to identify the ideal duration and combination of initial education and professional development from the current literature, and relevant studies are not available from all regions.
- ▶ Although well-trained staff are more likely to teach in more formal preschools, children who attend informal settings where staff have some training can still outperform children who do not attend any preschool setting.
- ▶ We know little about the relationship between structural characteristics and staff working conditions on children’s development in LMICs.
- ▶ Evidence in OECD countries suggests that favorable structural characteristics (e.g. high staff-child ratios) improve both program quality and child outcomes and that poor working conditions (e.g. wages) can lead to high turnover rates which may negatively affect children’s development.
- ▶ Teachers with more training and experience are more likely to hold child-centered teacher beliefs and engage in child-centered pedagogical practices (e.g., free-choice and small group activities). In turn, these practices are associated with better learning outcomes for children; however the direct relationship between teacher beliefs and child outcomes has not been made.
- ▶ Overall, more evidence is needed around a range of topics (e.g. the specific components of teacher training that affect quality, pedagogical beliefs, staff backgrounds and characteristics, remuneration and working conditions) in low- and middle-income contexts.

III. ECCE Contexts: By Region, Location, and Institution

In order to understand the achievements and challenges of ECCE personnel in low- and middle-income countries, it is important to have a contextual overview of the environments in which ECCE takes place. This section discusses regional ECCE enrollment trends, the divide in access and quality between urban and rural areas, and the role played by the private sector in these contexts. These three cross-cutting themes are inextricably linked to trends and issues in teacher qualifications, working conditions, and beliefs about the profession that follow in the next section.

A. Regional Enrollment Rates

Pre-primary enrollment has expanded but regional disparities persist

Since 2000, the world has seen undeniable expansion in pre-primary coverage (see *Figure 4*). However, growth is uneven and remains very low in many regions of the world. Latin America and the Caribbean (LAC) has some of the highest rates of ECCE enrollment in the developing world. Pre-primary, in general, is highly supported by governments and is even compulsory and free in a number of countries, such as the Dominican Republic and Brazil (Sun et al., 2015). While policies and services vary, many countries are moving towards a more integrated, holistic approach coordinated across sectors and government bodies (e.g. *De Cero a Siempre* in Colombia, *Crece Contigo* in Chile). Despite the region's relative progress, it still faces significant inequality depending on socioeconomic

status, cultural identity, and geographic location (UNESCO, 2010).

While gross enrollment is relatively high in Central and Eastern Europe, primarily due to a historically strong public education sector, Central Asia has seen little improvement. Enrollment rates often vary within countries, particularly between urban and rural regions and for ethnic and linguistic minority groups, such as the Roma children in many Eastern European countries (UNESCO, 2009).

ECCE coverage in East Asia and the Pacific fares better than that of other regions, but it still faces enormous disparities in provision across and within countries, depending on location (rural or urban), socioeconomic status, language, ethnicity, gender, and for children with disabilities. Even where provision is high, services are of variable quality. Political commitment to ECCE, however, is strong and in 2014 education ministers in the region convened and agreed to prioritize achieving universal pre-primary education by 2030 (Southeast Asian Ministers of Education Organization [SEAMEO], 2015).

Most countries in South and West Asia have increased pre-primary enrollment since 1999, though very low rates are still prevalent in countries such as Bangladesh and Afghanistan. Compared to other regions, South and West Asia has poor gender parity, with indexes ranging from 0.80 to 0.91 in Afghanistan, Nepal, and Pakistan. The region suffers from "an acute shortage of pre-primary teachers" which has been exacerbated by rapid enrollment in recent years (UNESCO, 2008, 2). In comparison to other regions, countries

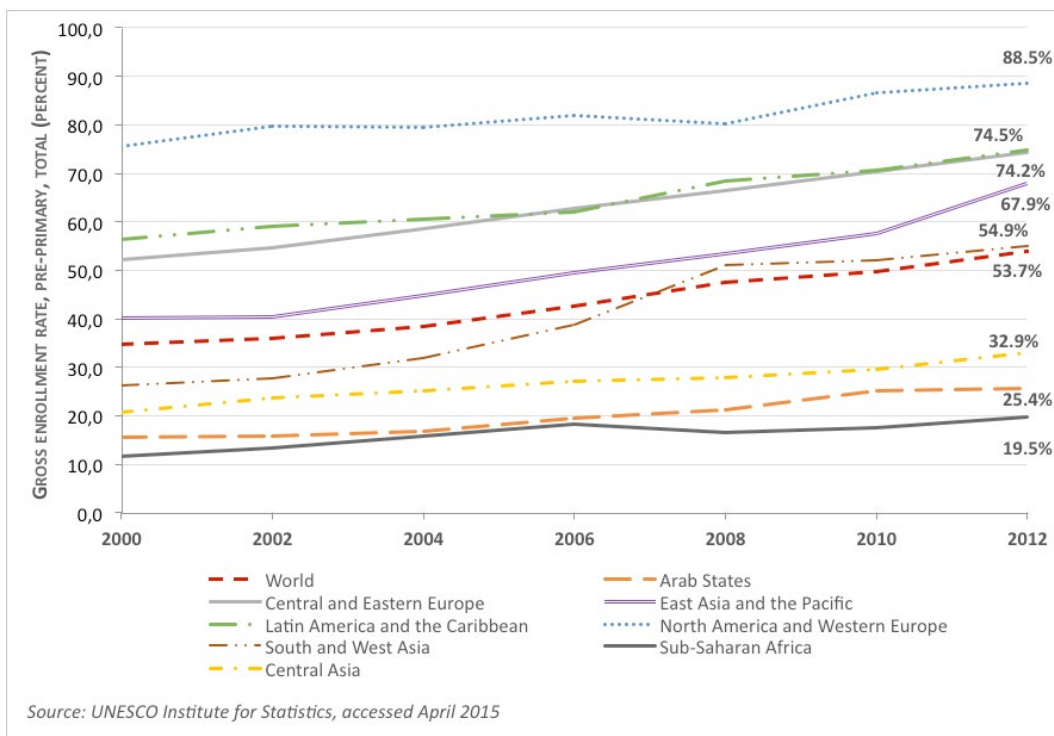
often lack comprehensive ECD policies and coordination among sectors and government agencies (Das, Mohamed, Saeed, Acharya, Noble, Panezai, & Jasraj, 2008).

Sub-Saharan Africa has the lowest coverage of any region, and services are often of low quality, signaling a weak ECCE workforce and system. According to the ILO (2012), “Few countries boast early childhood educators with higher education, qualification standards are non-existent or weak, professional development is rarely systematic or universal and some countries suffer from mismatches in training and development” (p. 38). ECCE coverage, however, is not uniform across the region. A few countries have experienced tremendous enrollment growth, such as in Ghana where the gross enrollment ratio (GER) in pre-primary surged from 47% in 1999 to over

100% in 2011 (Shaeffer, 2015); Mauritius and Seychelles boast universal pre-primary enrollment. Mozambique, however, enrolls only 4 percent of children in pre-school programs (Bruns, Martinez, Naudeau & Pereira, 2010). In 2012, Namibia’s pre-primary GER was about 16 percent (UNESCO Institute of Statistics [UIS]).

After Sub-Saharan Africa, the Arab States have the lowest rate of pre-primary enrollment, with existing services often provided by the private sector. Despite a high gross enrollment ratio (GER) in Lebanon (102 percent in 2013), only a handful of countries – Morocco, Qatar Bahrain, and Oman – have GERs that exceed 50 percent, and the latest data show rates as low as 6 percent in Syria, 4 percent in Djibouti, and just over 1 percent in Yemen (UNESCO Institute for Statistics [UIS]).

Figure 4: Global gains in pre-primary enrollment



B. The Urban-Rural Divide

Limited access to ECCE in rural areas

Regional, and even national enrollment rates often do not accurately illustrate the disparities in ECCE access and quality that exist between urban and rural areas of a country. In general, ECCE services are more concentrated in urban areas around the world which can present an obstacle to children living in rural areas who have fewer opportunities to attend an ECCE program (ILO, 2012). In the Gambia, for example, despite a national policy in 2004 public ECCE services are still primarily limited to urban areas, while those that exist in rural areas tend to be run by NGOs and faith-based organizations. In Togo, the majority of services (60 percent) are found in two of the country's main cities, and most private

ECD centers are located in the capital, Lomé (Education International [EI], 2010). In Mozambique, the vast majority of access to pre-primary education is concentrated among wealthier children attending private programs in urban areas, while programs in rural areas tend to be run by churches (Bruns et al., 2010). In China, the majority (61 percent) of children below the age of 6 live in rural areas of the country and, on average, receive only one year of pre-school education in comparison to three years in urban areas (Sun et al., 2015). The lack of ECCE opportunities in rural areas may indicate difficulty recruiting and retaining staff. In addition to general shortages of ECCE teachers, rural areas often suffer from a scarcity of quality, trained professionals which will be discussed in Section IV.

C. Private Provision of ECCE

Figure 5: Private provision as a proportion of pre-primary gross enrollment, by region, 2013

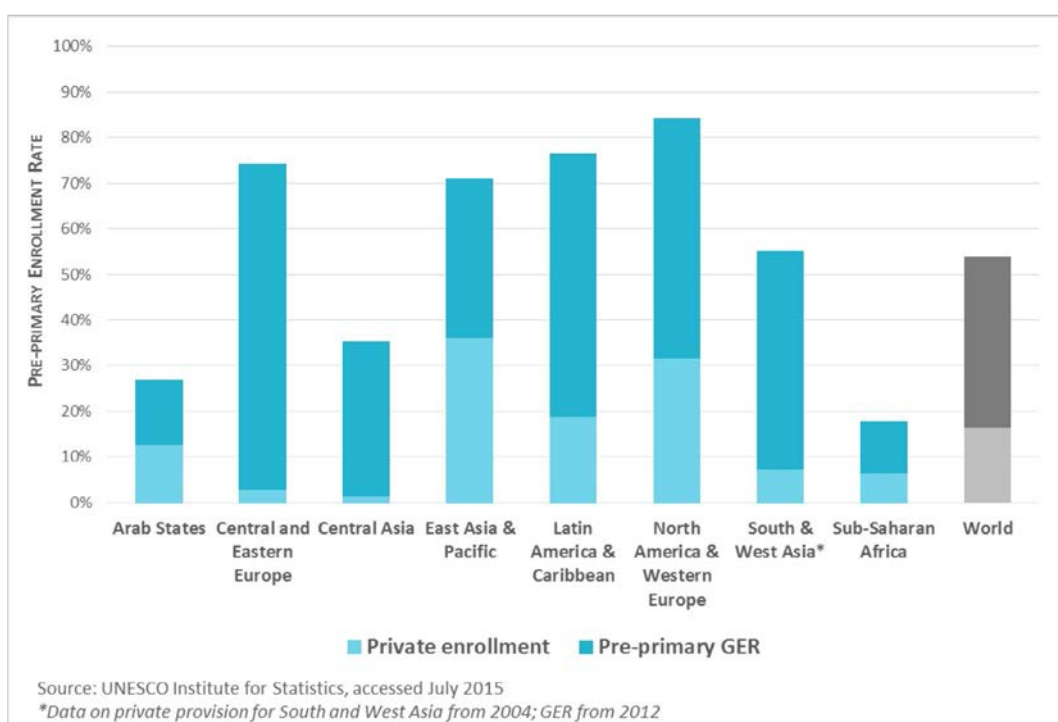
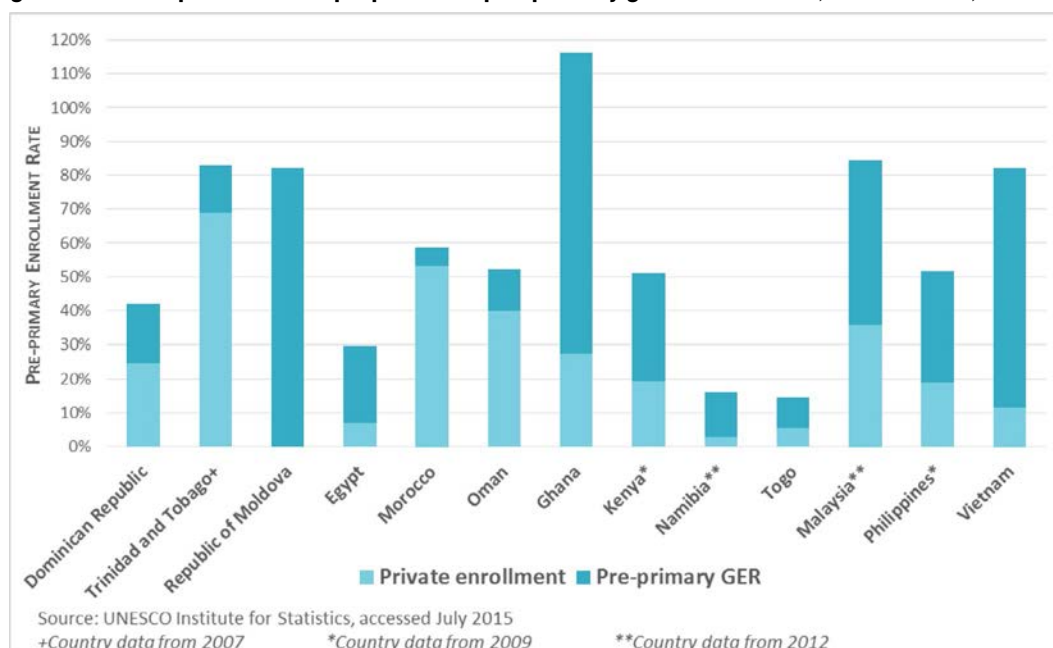


Figure 6: Private provision as a proportion of pre-primary gross enrollment, select LMICs, 2013



Though the private sector provides about only 30 percent of ECCE services globally, it can have a much more prominent presence in certain regions and countries, particularly those with low overall coverage (see *Figure 5*). In the Arab States, private provision is responsible for nearly half of all enrollment, with even higher coverage in countries such as Morocco and Oman (see *Figure 6*). The majority of private services in the region are for-profit, as in the cases of Bahrain, Jordan, Morocco, Oman, and Palestine (Shehadeh, 2008). In Egypt, however, enrollment in public and private kindergartens and other ECCE centers is about even, with private centers run primarily by NGOs, religious organizations, or out of individuals' homes (UNESCO IBE, 2006a).

Some countries in Sub-Saharan Africa have relatively small private sectors, such as Togo (less than 50 percent), Kenya (less than 40 percent), and South Africa (less than 10 percent), (ILO, 2012), though private schools may cater to the overwhelming majority of enrolled children in peri-urban neighborhoods of large cities, such as in Accra, Lagos, Nairobi and Johannesburg (Bidwell & Watine, 2014). Uganda has historically high – nearly 100 percent – private provision (ILO, 2012). Private does not always mean for-profit businesses: In Togo, the majority of ECCE services (66

percent) fall outside the public domain, but are primarily operated by churches and individuals (EI, 2010).

After Central and Eastern Europe and Central Asia, regions with historically strong public sectors that contribute to nearly 97 percent of all pre-primary enrollment, Latin America has perhaps the strongest ECCE public provision, accounting for nearly 75 percent of enrollment (UIS). Private provision in the Caribbean, however, differs from the rest of the region and comprises about 90 percent of enrollment (ILO, 2012).

The shares of private and public provision in East Asia are fairly even, with the private sector accounting for about half of pre-primary enrollment (UIS). This corresponds to 45 percent private enrollment in Malaysia and about 50 percent in Vietnam (ILO, 2012). There were some 49,000 kindergartens across the Philippines in 2014, of which the majority (80 percent) was public (Shaeffer, 2015).

Private provision can present a challenge to the ECCE system and workforce as public oversight and data collection are more limited, complicating quality control (OECD, 2012). Personnel standards may be more difficult to enforce, and in some countries, there is a large unregulated sector. As

discussed in Section IV, employment in the private sector has implications for staff professional development and working conditions, including wages.

D. Summary and Key Takeaways

- ▶ While all regions have seen some expansion in pre-primary enrollment, growth has been uneven and rates are still very low in some, such as Central Asia, the Arab States, and Sub-Saharan Africa. Central and Eastern Europe, Latin America and the Caribbean, and East Asia and the Pacific have relatively strong ECCE coverage, but face challenges in including more marginalized populations.
- ▶ These regional trends have implications for the ECCE workforce. For example, regions with high GER may face challenges to improve and maintain the quality of provision through ongoing professional development and supportive working conditions. In regions with lower GER, there are additional challenges such as training sufficient numbers

of staff to support the expansion of provision without compromising quality.

- ▶ Access to and quality of ECCE services can vary dramatically within country contexts, as pre-primary programs tend to be more heavily concentrated in urban areas. Rural areas may have a shortage of teachers due to challenges in recruiting and retaining personnel, particularly those who are qualified.
- ▶ The private sector, while nearly absent in some regions (Central and Eastern Europe, Central Asia), is a significant, and at times dominant provider of ECCE services, particularly in regions with low overall access (such as the Arab States and peri-urban areas of major cities in Sub-Saharan Africa). Private settings can be for-profit as well as run by NGOs, churches, and individuals, and are often difficult to monitor and regulate.

IV. ECCE Personnel Trends in Low- and Middle-Income Countries

Along with expanding enrollment and attention paid to early childhood care and education (ECCE) worldwide, there is a growing pre-primary workforce. In 2009, this workforce stood at more than 7.5 million people, with the largest growth seen in South and West Asia and Sub-Saharan Africa (ILO, 2012). Despite progress, the availability of trained pre-primary teachers still lags behind that of the primary workforce. Who makes up this workforce, where do they work, and what kind of support do they have? This section answers these and other relevant questions by identifying trends among the ECCE workforce, with a particular focus on LMICs.

A. Who Makes Up the ECCE Workforce?

The ECCE workforce tends to be young and female

Pre-primary teachers globally tend to be younger than teachers of other levels, which also indicates they have fewer years of professional experience. In Jordan and Paraguay, for example, 80 percent and 52 percent of pre-primary teachers are below the age of 30 (UNESCO, 2006). In some countries this difference is particularly exaggerated, as in Kenya, where half of primary teachers in 2005 were over the age of 50, while only 13 percent of pre-primary teachers fell in that age group. Pre-primary teachers in LMICs also tend to be younger than their OECD counterparts. More than 20 percent of pre-primary teachers in OECD countries are over the age of 50, except in the Republic of Korea and Japan (ILO, 2012),

and those under 30 comprise less than 20 percent of the workforce. In comparison, younger teachers – those under 30 – make up 20 to 40 percent, on average, of the pre-primary workforce in LMICs (Wallet, 2006, 14-15).

The ECCE workforce is overwhelmingly female, and has become even more so in recent years (see *Figure 7*), with women now making up 94 percent of personnel worldwide. This may historically and culturally be due to the perception of early childhood as a maternal task (Shaeffer, 2015), as well as due to the low status and pay of most ECCE workers, which will be discussed later in this section. While research does not link gender to quality practices in the classroom, it can be argued that boys and girls need a male role model in school from an early age to help “counter traditional views of women in child rearing and ensure that school and learning remain gender neutral” (OECD, 2012). To this end, several OECD countries have made concerted policy efforts to improve the proportion of men working in ECCE, but with limited success (UNESCO, 2006).

In general, there is a higher proportion of female teachers in pre-primary than in primary schools (see *Figure 8*). The feminization of the pre-primary teaching profession and its contrast with other education levels is especially pronounced when compared to primary or secondary teachers in the Arab States and South and West Asia (UIS).

In some countries, the concentration of female teachers is more pronounced in the

private sector: in Ghana, only 68 percent of public pre-primary teachers are female compared to 93 percent in the private sector (ILO, 2012). Sub-Saharan Africa has the most significant male presence in its ECCE workforce, though female workers still form the majority in the region. Men make up more than half of the pre-primary teachers in Liberia and Tanzania (ILO, 2012), and about 45 percent in the Gambia (EI,

2010). In Namibia, only one-third of pre-primary teachers were female in 2004, but the percentage of trained female teachers (33 percent) far exceeded the percentage of trained male teachers (12 percent) (UNESCO IBE, 2006f). Other countries outside Sub-Saharan Africa with significant proportions of male teachers include Brunei (22 percent) and Timor-Leste (17 percent) (SEAMEO, 2015).

Figure 7: Female proportion of pre-primary teachers by region, 1999-2013

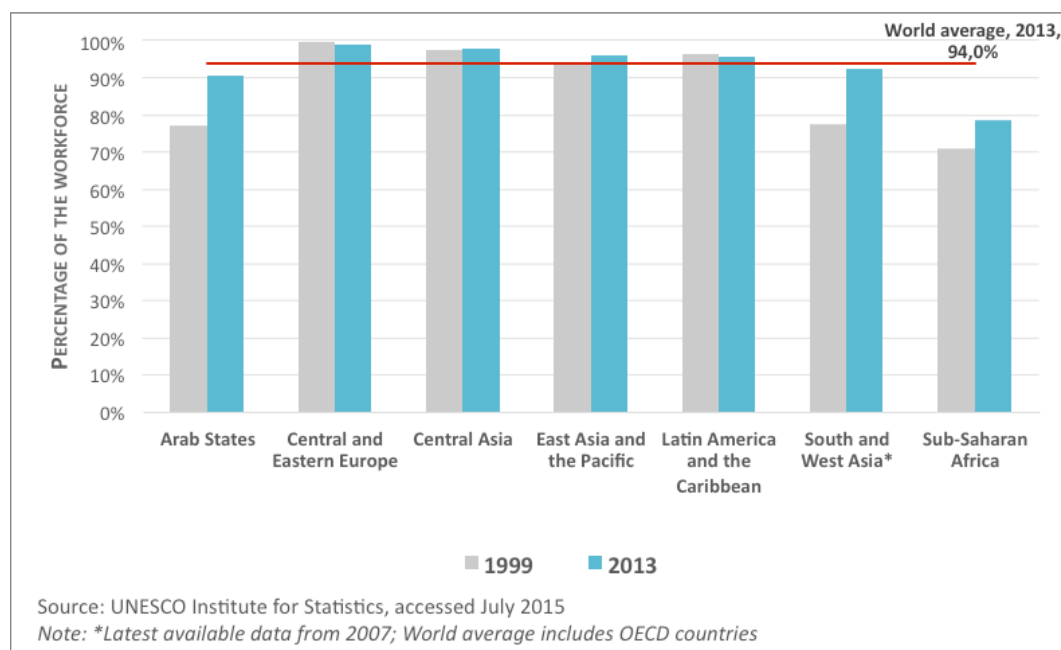
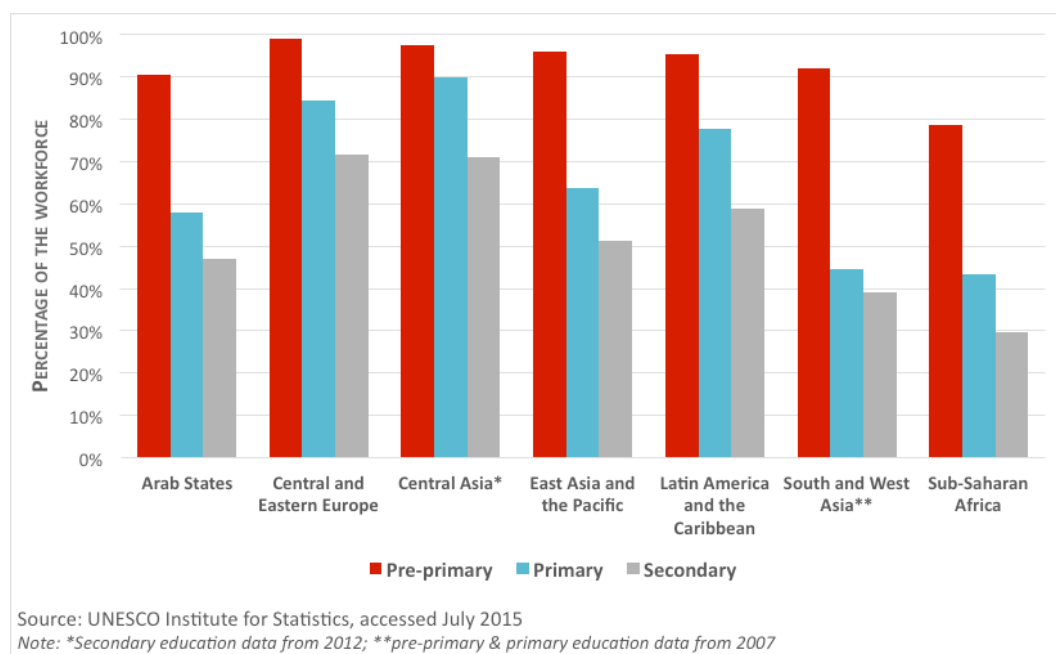


Figure 8: Female proportion of pre-primary teachers by education level and region, 2013



B. In What Settings Do ECCE Teachers Work?

There is a tendency toward integrating pre-primary classes into primary schools

A common policy and strategy for increasing access to ECCE for children in the year or two before starting compulsory schooling involves attaching pre-primary classrooms to existing facilities, usually primary schools. This can be seen in a number of example countries in Sub-Saharan Africa such as Kenya, Lesotho, South Africa, and Zimbabwe (Biersteker et al., 2008) and more recently in Nigeria (EI, 2010). In the Gambia, a National Education Policy for 2004-2015 announced government plans to attach ECD centers for children 3-6 to existing primary schools in the country's most disadvantaged areas. The policy also intended to recruit primary teachers from those schools to teach in the affiliated ECD centers (EI, 2010). In 2007, Ghana decided to pair 60 percent of primary schools with two kindergarten classrooms each, though there continues to be strong provision by NGOs, community-based organizations, the faith-based community, and other private providers (Shaeffer, 2015). With the prevalence of community-based models implemented by NGOs such as Save the Children and Aga Khan in Mozambique, *escolinhas*, or ECD centers, are primarily located near primary schools to generate synergies between the two. Primary school directors are given informal oversight over ECD teachers and are able to share common resources and school materials (World Bank, 2012). Similar to Sub-Saharan Africa, some countries in Central and Eastern Europe and Central Asia also integrate pre-primary education into primary schools. For example, in parts of Tajikistan where children do not speak the national language as their mother tongue, children may enroll in a "grade 0" at the age of 6 to prepare them for primary school in the national language at age 7 (Bartlett, 2013).

Although pre-primary education is increasingly integrated with the primary

school system as far as the structures are concerned, this does not necessarily lead to parity in training requirements, status, and remuneration between pre-primary and primary teachers. Moreover, teachers of younger children are often not fully involved in the professional development activities within the schools. In other cases, pre-primary educators participate in the same training as primary teachers, such as Senegal, Lesotho and Zimbabwe (Wallet, 2006), but this may have implications for quality if there is not sufficient emphasis on the early years.

Early childhood settings can be very diverse and vary in levels of formality

Despite this trend, many ECCE services across the world remain more diverse. A non-randomized, qualitative study of ECD centers in countries across the LAC region by the Inter-American Development Bank (IDB) uncovered a number of other diverse settings. In the Dominican Republic's capital of Santo Domingo, three different ECD programs serving a total of some 17,000 children operated in community technology centers (CTCs), dedicated program centers, modified homes, community centers, or facilities attached to local churches or schools. In Trinidad and Tobago, the national Early Childhood Care and Education Centers run by the Ministry of Education serve about 3,400 children in dedicated facilities, community centers, and local churches and schools (Araujo et al., 2013).

As with private provision, this presents a particular challenge in monitoring quality and standards (OECD, 2012a). In Namibia, services are primarily provided by NGOs and local community organizations in urban areas and can include formal centers, non-formal centers, and home-based programs. In some communities – such as Katutura, a poor, black township on the edge of Namibia's capital – there are "backyard nurseries" that operate out of individual homes for extended hours and host as many as 50 children each (Penn, 2008). In the

Arab States, where the majority of services are private, for-profit businesses tend to implement more institutional programs, while NGOs and non-profits are more commonly associated with non-formal settings (Shehadeh, 2008).

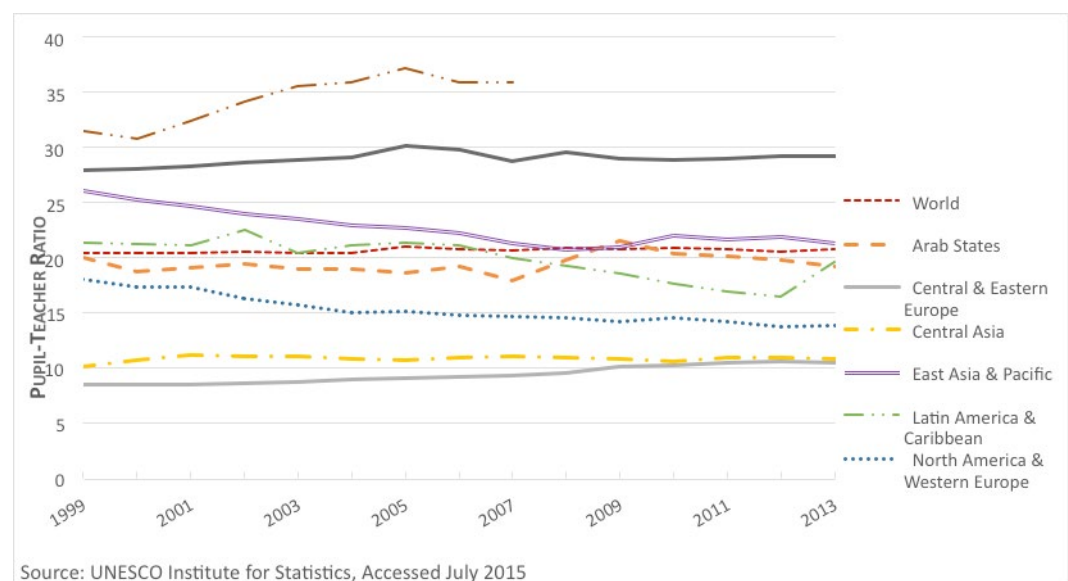
Pupil-teacher ratios (PTRs) vary greatly within and across countries but tend to be large, affecting quality

Child-staff ratios have been shown to affect the quality of services and child outcomes in ECCE settings. With fewer children per teacher or staff member, adults face less stress and can have more frequent and meaningful interactions with learners (OECD, 2012). The global average pupil-teacher ratio (PTR) at the pre-primary level has hovered around 20:1 since 1999 (see *Figure 9*), though this static figure may actually indicate improvement given the rise in enrollment during the time period. While generally lower than those in primary school, these ratios can vary within regions and countries. The lowest average PTRs are typically found in Central and Eastern Europe or Central Asia and the largest ratios are typical of South and West Asia. In Nepal, for example, one teacher can be in charge of more than 40 children (EI, 2010).

Though Sub-Saharan Africa has a regional average PTR of around 29:1, individual country averages can be much lower, such as in Togo with 17:1, or significantly higher, such as in Nigeria with 37:1 (EI, 2010). Some countries among the Arab States have experienced a decreasing trend: in both Morocco and Oman, for example, the average PTR fell from nearly 40 to less than 20 students per teacher from 1999 to 2005 (Shehadeh, 2008).

The number of children per adult can vary within countries due to a shortage of personnel in rural areas. In 2008, China had a ratio of children to full-time qualified teachers in rural areas of 51:1, while the ratio in towns was much lower (about 25-28 children per teacher) and lower still in larger cities (about 16-19 children) (Sun et al., 2015). In-country differences can also vary between public and private settings. In Ghana, for example, PTRs in private ECCE centers are much lower, around 26:1, than those in public centers, about 34:1 (EI, 2010). A shortage of teachers and subsequent high PTRs not only can compromise the quality of interactions and learning taking place, but can also have implications for access, as crowded classrooms may be less able to accommodate additional children.

Figure 9: Pre-primary pupil-teacher ratios (PTRs), 1999-2013



C. What Are ECCE Teachers' Qualifications?

Many LMICs do not require pre-primary teachers to have received tertiary education

Proper training and education equip ECCE personnel with the skills, knowledge, and beliefs to create quality learning environments that ultimately improve child outcomes. As discussed in Section 1, studies demonstrate that educated pre-primary teachers who have specialized training in ECCE engage in more stimulating interactions with children and can positively influence colleagues who are less qualified (OECD, 2012a; 2012b). Most OECD countries require at least 3 years of post-secondary education for pre-primary teachers (OECD, 2006), with a significant percentage of staff holding bachelor's degrees in countries such as Denmark, New Zealand, and Norway (ILO, 2011). These teachers are trained specifically to work with young children, often at the same level and institution as primary teachers (ILO, 2012). In OECD countries with a split ECCE system, kindergarten and preschool teachers generally have higher initial education requirements than caregivers working with younger children. In contrast, countries delivering integrated ECCE services tend to have higher education qualification requirements that are consistent across all personnel working with children before entering primary school (OECD, 2012).

In contrast, minimum requirements in LMICs tend to be lower, often requiring only a secondary education to enter the profession (see *Figure 10*). In some regions, such as Southeast Asia and Latin America and the Caribbean, it is more common to require some form of post-secondary or tertiary education. Most Southeast Asian nations, such as Thailand, Malaysia, and Indonesia, and the Philippines, require some tertiary education which can range from 2- or 3-year diplomas to 4-year Bachelor's degrees (SEAMEO, 2015).

Teachers in the LAC region are often required to pursue tertiary degrees or certificates. Personnel interviewed in a 2011 IDB study in both the Dominican Republic and Trinidad and Tobago held university degrees in ECCE. Teachers and educational coordinators in the Dominican centers needed a degree in early childhood or basic education, while teacher aides and assistants could be university, or sometimes secondary students. In Trinidad and Tobago, teachers additionally needed 3 to 5 years of experience in the field (Araujo et al., 2013). In Argentina, ECCE teachers must have 4 years of post-secondary education (Shaeffer, 2015).

In many parts of Sub-Saharan Africa, pre-service training programs can be very limited, at times spanning one year or less. In Namibia, for example, standards require a grade 6 education, with 6 weeks of pre-service training for teachers (UNESCO IBE, 2006d). Few countries in the region have early childhood teachers with a higher education (ILO, 2012).

Education requirements for teachers in the Philippines

In the Philippines, both kindergarten and primary school teachers must hold a Bachelor's degree, though the specific focus can vary and include a degree in: early childhood or preschool education; elementary education with a specialization in teaching early grade, kindergarten, preschool, or ECCE; special education with a focus on ECCE; secondary education with an additional certification and experience in ECCE; or an allied field, such as psychology or nursing, with a focus on ECCE (Shaeffer, 2015).

A sample of teacher competency guidelines across regions

In European countries, competency guidelines have been detailed by the International Step by Step Association (ISSA) and the Competence Requirements in Early Childhood Education and Care (CoRE) study. They include dimensions of knowledge, practices, and values in viewing child development from a holistic perspective. The guidelines suggest competent teaching strategies where teachers are sensitive to children's needs in their communication and interactions, understanding of children's learning as a constructed and open-ended process, and committed to inclusive educational approaches on diversity and values of democracy (ISSA, 2010; Urban et al., 2011).

Competency guidelines or standards for ECCE personnel are less common in developing countries, but there are signs of change. More than 40 countries have developed Early Learning and Development Standards (ELDS), statements of what children at particular ages are expected to know and be able to do (Britto, P.R., Ogbunugafor, C.B., Cerezo, A., van Ravens, J., Gilliam, W., Engle, P. et al., 2010). These standards may be used to improve policies and programs for young children, including teacher preparation and practices. In Southeast Asia, for example, many countries including Lao PDR, Singapore, and Timor-Leste, have recently developed or revised their national ECCE curricular frameworks. Suggested guidelines on teacher competencies made reference to training and approaches which are holistic, child-centered, developmentally appropriate, and with special attention towards valuing differences and diversity (SEAMEO, 2015). Vietnam and the Philippines have developed in-country teacher standards with an emphasis on teaching approaches that cater to holistic (physical, socio-emotional, cognitive, language, moral-spiritual, cultural, and creative) development, reflecting national perspectives and culture (Miyahara & Meyers, 2008).

Figure 10: Pre-service & entry requirements for select low- and middle- income countries

Region	Country	What are entry requirements to become a preprimary teacher?	Do entry requirements include training or specialization in ECD ² ?	Is there a public authority in charge of regulating pre-service training for ECCE professionals?	Is some form of pre-service practicum/fieldwork required?	Do ECCE professionals comply with established pre-service training standards/professional qualifications?
Arab States	Yemen	High school completion	X	X	X	N/A
Central & Eastern Europe	Albania	Formal tertiary training	✓	X	X	51% - 85% compliance
Central Asia	Kyrgyz Republic	Formal tertiary training	✓	N/A	✓	51% - 85% compliance
East Asia & Pacific	Samoa	High school completion	✓	✓	✓	51% - 85% compliance
	Tuvalu	High school completion	✓	✓	✓	< 50% of teachers comply
	Vanuatu	High school completion	X	X	✓	Over 85% compliance
Latin America & Caribbean	Belize	High school completion	✓	✓	✓	N/A
	Colombia	High school completion	✓	X	X	N/A
	Jamaica	High school completion	✓	✓	✓	< 50% of teachers comply
South & West Asia	Nepal	High school completion	X	N/A	X	Over 85% compliance
Sub-Saharan Africa	Burkina Faso	Formal tertiary training	✓	✓	✓	< 50% of teachers comply
	Guinea	High school completion	✓	✓	✓	N/A
	Mauritius	High school completion	✓	✓	✓	51% - 85% compliance
	Nigeria	High school completion	X	✓	✓	N/A
	Seychelles	High school completion	✓	✓	N/A	< 50% of teachers comply
	Tanzania	High school completion	X	✓	✓	N/A
	Uganda	High school completion	✓	X	X	N/A

Source: World Bank, SABER-ECD Database, Accessed July 2015

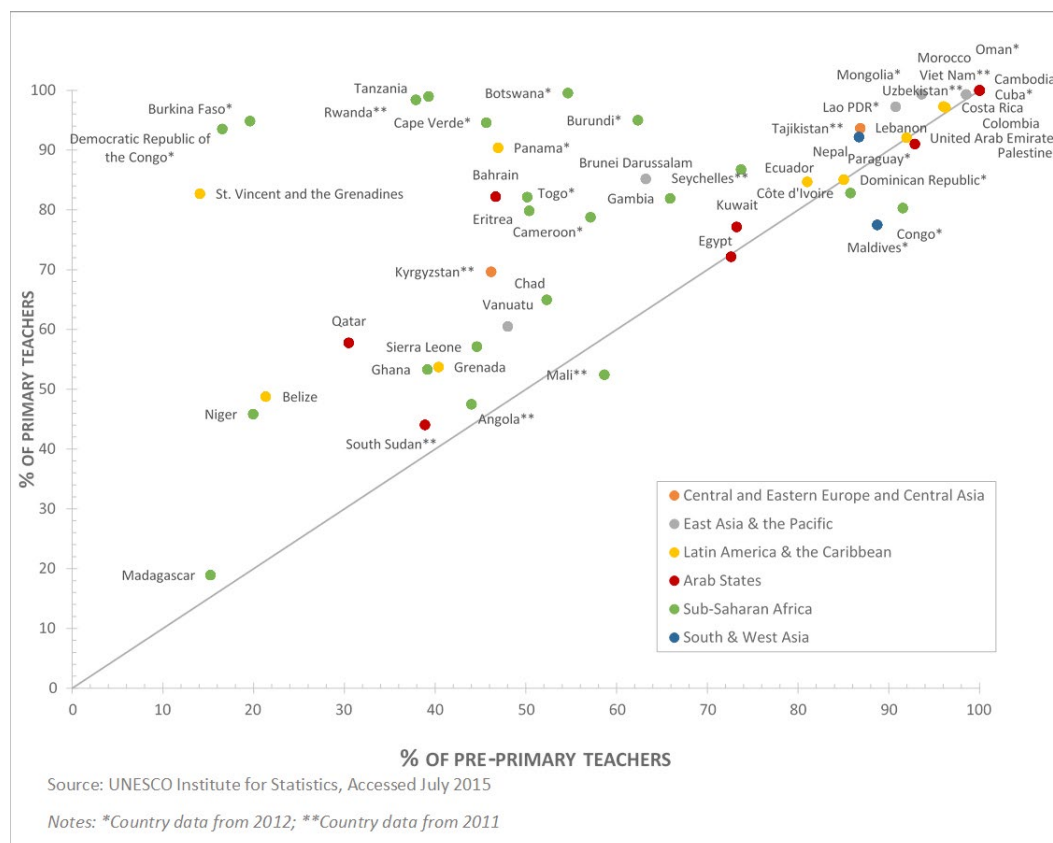
Many ECCE teachers do not meet minimum requirements with implications for access and quality

Establishing standards and other training requirements are meaningless if teachers do not comply with them. According to 2009 data, nearly one-half of 80 low- and middle-income countries estimated that most pre-primary teachers (90 to 100 percent) met national training requirements. However,

almost one-quarter of these 80 countries reported that less than half of teachers met these standards (ILO, 2012). In general, countries tend to have higher proportions of primary teachers than pre-primary teachers who are trained to national standards, such as a number of countries in Sub-Saharan Africa (see *Figure 11*).

2 World Bank SABER uses specialization in “ECD” rather than “ECCE”

Figure 11: Proportion of primary and pre-primary teachers who are trained to national standards, 2013



What are the reasons for the shortage of trained teachers? Some countries expand access too rapidly without leaving time to develop a solid workforce or do not adequately prepare teachers to reach necessary qualifications. Colombia is currently not producing enough trained professionals to meet the national *De Cero a Siempre* strategy: “caring for 1.2 million vulnerable children over the age of 3 in child care centers would require nearly 74,000 professionals with degrees in early childhood education. It’s estimated that, currently, only about 7,500 professionals graduate in fields related to education each year” (Bernal, 2013). In the Philippines, requirements are more rigorous and, while teachers may be trained, 52 percent have not passed the required professional exam that certifies teachers for permanent positions and certain associated benefits (Shaeffer, 2015).

Shortages can also result from limited capacity for educating and training pre-primary teachers. In several countries, there

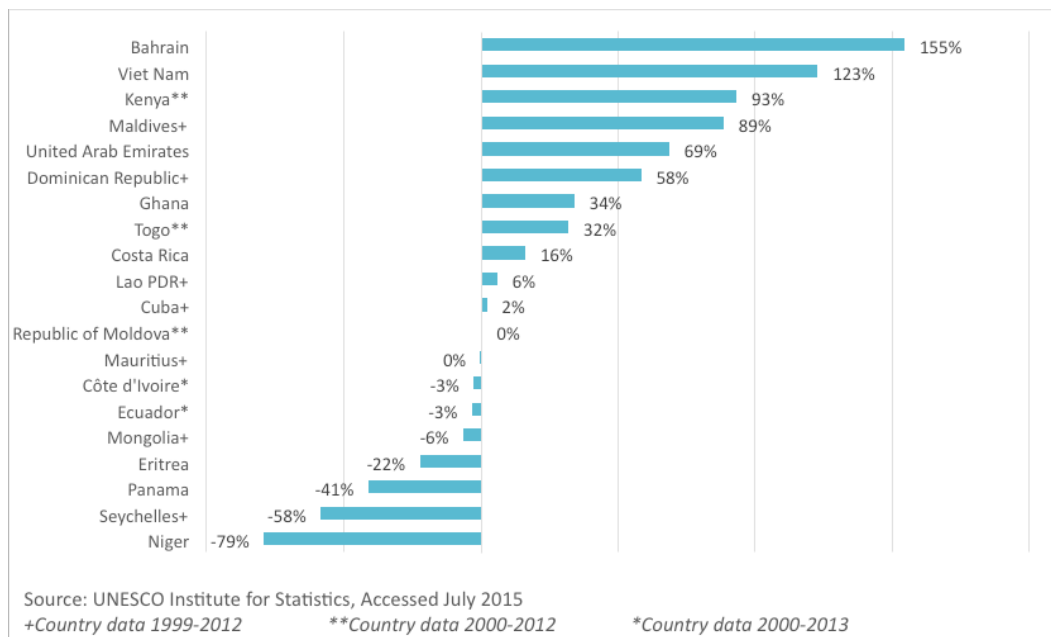
are insufficient higher education or training institutions to train all eligible candidates, especially those who live and work outside the major cities. In Togo, the closure of teacher training colleges in 1983 affected the proportion of qualified teachers in the country as many of them were recruited without any pre-service training, and often with already low qualifications. The training colleges have since reopened in 2010. However, there is still a huge gap in training to be addressed for teachers who did not benefit from pre-service training program during the college suspension (GCE-EI, 2012). Neither Chad nor Syria has a pre-service training program specifically tailored to pre-primary education (Shaeffer, 2015; Sun et al., 2015).

Positive trends over the past decade are apparent in parts of Central and Eastern Europe, many of the Arab States, and parts of East Asia. In Moldova, more than 90 percent of pre-primary teachers were trained to national standards in 2009, with close to

100 percent of teachers trained in Oman, Djibouti, Iraq, Kuwait, and Palestine (ILO, 2012; Shehadeh, 2008). Large gains in recent years have been seen in Vietnam where close to 100 percent of pre-primary teachers are now trained to national standards (see *Figure 12*). Despite positive increases in

some countries, others have expanded their workforce by recruiting untrained teachers. Fragile and conflict-affected countries – such as Niger and Eritrea – often see a decline in the proportion of trained teachers as well (UNESCO, 2015).

Figure 12: Change in proportion of trained pre-primary teachers, 1999-2013



Teachers working in rural areas, private settings, and non-formal programs tend to have lower qualifications

The percentage of trained teachers at the national level can often hide enormous disparities due to both the type of ECCE setting (e.g. public vs. private or formal vs. non-formal) and region in which they work. Many times, teachers working in the private sector do not hold the same qualifications as their public sector counterparts. A 2014

study of ECCE center programs in certain states of India found that more than half (68.8 percent) of ECCE personnel at private facilities were not trained at all, versus only 11 percent in public centers (Kaul, Chaudhary & Sharma, 2014). In Egypt, most teachers employed in government-run schools have attended university and specialized in ECD or education, while those employed by NGOs may be high school graduates, or university graduates who did not specialize in education (UNESCO IBE, 2006a). Additionally, many

Combatting shortages of trained professionals in China

New policies and strategies exist, particularly in China, which help to address a chronic shortage of trained ECCE teachers in the field. The Chinese government now encourages a surplus of trained primary and secondary teachers to retrain to be kindergarten teachers. Since 2011, the government has provided funding for in-service training programs for those who become principals and teachers in both public and private kindergartens (Sun et al., 2015). In addition, new graduates in urban areas of the country are given incentives to relocate to rural parts of the country (Shaeffer, 2015).

non-formal programs are run by mothers and community members with limited (only primary or sometimes secondary) education (UNESCO, 2010). In the Dominican Republic, for example, non-formal programs, especially for children younger than 5, often employ youth, volunteers from the local community, parents, and occasionally teachers of other levels who cannot find work in the areas in which they were trained (Alcántara, López, Mendoza, & Rodriguez, 2012).

There is a shortage of teachers, particularly qualified teachers, in remote, rural, and marginalized regions (Shaeffer, 2015). In China, the majority (61 percent) of children below the age of 6 live in rural areas of the country and, on average, receive only one year of pre-school education in comparison to three years in urban areas. In addition to this gap in coverage and access, most pre-primary teachers in rural areas are also not professionally qualified. Programs often hire teachers with only an upper secondary, or even lower secondary education and little or no ECCE training (Sun et al., 2015). One-fifth of pre-schools in Vietnam reach national standards and the majority of those which do are located in urban areas (Shaeffer, 2015). In Tanzania, rural classes are typically taught by less-qualified professionals in smaller spaces and with larger pupil-teacher ratios (Mtahabwa & Rao, 2010).

D. What Are Teacher Beliefs and Pedagogical Practices?

Teachers' beliefs around different topics inform pedagogical practices and are key factors in preschool quality. Their perception towards the curriculum influences teacher learning and classroom practices during pre-service and in-service years (Akin, 2013; Banu, 2014). Additionally, teachers' ideas about children and how they learn best shape their teaching approaches. Finally, teachers' confidence in their own efficacy and self-assessment of their roles in supporting children's learning, development, and

well-being are positively related to their ability to meet the diverse needs of children (Clasquin-Johnson, 2011). There is currently no global survey or tool to collect big data on teacher beliefs and pedagogical practices. This section, therefore, examines a number of case studies that are not necessarily generalizable to the overall workforce in low- and middle-income countries.

Curriculum changes and perceived lack of support from leadership can negatively affect job satisfaction

Teachers often respond to curriculum changes in negative ways citing that they lack leadership support. In South Africa, the introduction of the official National Curriculum Statement (NCS) into the Reception Year or Grade R resulted in concern among teachers and a lack of confidence in principals and heads of departments after perceiving a lack of instructional leadership and engagement around the new curriculum. Teachers also viewed leadership feedback as limited when it came to content and implementation of the new curriculum changes (Clasquin-Johnson, 2011). In Malaysia, teachers cited a lack of administrative support and low quality of in-service courses as challenges in implementing the National Preschool Curriculum. Teachers were also unfamiliar with the concept of learning through play and believed that the approach was achieved "as long as children [were] happy" and showing an interest in toy materials (Boon, 2010, 54). In Hong Kong, close to half of ECCE teachers resigned within the initial six months of implementing a new curriculum due to a lack of confidence in implementing the change, an increased workload, stress, and a sense of mistrust from school leadership (Wong, 2003 as cited in Clasquin-Johnson, 2011). Curriculum changes, lack of support from management, and other stressors affecting job satisfaction may lead to teacher turnover and lower personnel retention rates. Teacher departures and instability may limit children's access to ECCE. There are also implications for quality: disruptions to teachers' interactions and relationships

with students can negatively affect children's development.

Priorities for children's learning vary among teachers in different cultural contexts

The IEA Preprimary Project demonstrated that teachers across countries have a considerable understanding and agreement of what parents seem to desire for their children's learning. As with parents, teachers regard social skills with peers, language, and self-sufficiency as most important while self-assessment and pre-academic skills and social skills with adults were considered least important (Montie et al., 2006; Weikart, 1999).

Beliefs can still vary across countries, however. In Bangladesh, preschool teachers are mostly concerned with "traditional" conceptions of quality preschool education with a heavier emphasis on fulfilling the textbook requirements and passing examinations rather than the process of learning (Banu, 2014). In Sub-Saharan Africa, there is a widely-held belief that children should be exposed to the language of power (as opposed to indigenous or home languages) as a medium of instruction in ECCE settings, contradicting evidence that children learn best through first achieving a mastery of their mother tongue (Serpell & Nsamenang, 2014). In South Africa, teachers emphasized different content focus areas, ranging from the importance of basic knowledge acquisition, to social skills, to a stronger emphasis on school readiness (Clasquin-Johnson, 2011). In Turkey, there is a discrepancy between teachers' self-reported beliefs and their behaviors. Even though teachers hold higher regard for child-centered curricula that respond to children's needs, interests, and active learning, observed interactions are closer to teacher-directed practices and methods (Akin, 2013). In eight East Asia and Pacific countries, there are differences in the priorities placed on children's learning, though they largely cover motor skills development, socio-emotional

development, and cognitive development. A handful of teachers additionally note the importance of moral/spiritual and arts/creativity development (Miyahara & Meyers, 2008). In Malaysia, teachers were less supportive of multicultural education due to limited training around that content, and often fear going against their religious teaching and burdening pupils in mono-ethnic classrooms. Teachers also felt that current implementation is limited due to lack of exposure or knowledge about policy and practices in multicultural education (Phoon, Abdullah, & Abdullah, 2013).

Training tends to support more child-centered beliefs and practices

Teachers' credentials and training often shape pedagogical beliefs about how children learn best. This is particularly evident in countries where practices of direct instruction are traditionally utilized. Untrained teachers especially face challenges in shifting towards a play-based approach. In Vietnam, early childhood teachers trained with child-centered learning incorporating the use of play, active engagement, and questioning, felt empowered to put their beliefs into practice. In contrast, unqualified teachers often lacked confidence in communicating and implementing these ideals (Thao and Boyd, 2014). In Jordan, teachers with low credentials (e.g. those without specialized training in early childhood education, those who did not undergo pre-service training, and those with fewer than three years of teaching experience) typically held traditional and authoritative beliefs that favored directed teaching approaches (Betawi, 2010).

E. What Professional Development Support Do ECCE Teachers Have?

Figure 13: Good practices in professional development

Colombia	Recognizing ethnic diversity and indigenous rights, the Colombian Institute of Family Welfare (ICBF) provides trainings to pre-primary personnel from indigenous communities.
East Africa	The Madrasa Resource Center pre-school programs in Kenya, Uganda, and Tanzania emphasize continuous professional development and support to teachers at a low cost. In addition to initial training, after graduating from pre-service training, teachers at the center receive six months of ongoing professional development training in early childhood development. Teachers are continuously trained and supported in utilizing locally-sourced materials and appropriate language in their daily interactions with children (UNESCO, 2012).
Lesotho	In 2007, the Lesotho College of Education established a two-year in-service training course for early childhood teachers to complement the Certificate in Early Childhood Education. Lesotho employs a cascading capacity building model whereby national teacher trainers are able to train district and community-level teachers to cater to the training needs of experienced but unqualified staff.
Mauritius	Mauritius developed a National Certificate in Early Childhood Education in collaboration with the qualification authority to ensure harmonization of all teacher training courses currently being offered by private providers and those from the National Training Institution.
Philippines	Since 2009, the Department of Education Order has implemented the Individual Plans for Professional Development (IPPD) program to train Filipino teachers during the summer on curriculum use, principles of teaching and learning, classroom management, and student assessment. Participating teachers are eligible to accumulate points towards promotions or permanent positions.
South Africa	Training of teachers is offered by an array of service providers, including NGOs and tertiary institutions, and is regulated by the National Qualifications Framework for Early Childhood Development. Training programs support teachers who lack strong academic backgrounds to provide children with stimulating activities. Continuous support is also provided with regular visitations throughout the year from trained teachers.

Sources: Shaeffer, 2015; UNESCO-IICBA, 2010

In-service training requirements are weak and access to relevant professional development is limited

Continuous professional development or in-service training programs help personnel stay up-to-date on knowledge in the field and develop new skills they were previously lacking, particularly when these programs are frequent or longer-term (OECD, 2012b). In the OECD countries, continuous professional development is available through a wide range of providers and financing models and is often mandatory for promotion or a salary increase, such as in Chile, Israel, South Korea and Mexico (OECD, 2014).

Although most teachers in LMICs tend to have access to in-service training, the duration and relevance varies greatly and few

countries seem to mandate participation. Training in parts of Sub-Saharan Africa and South, West, and Central Asia can be more limited and ad-hoc, though good practices do exist (see *Figure 13*). Many teachers in Ghana are required to pay for their own in-service training, even when it is government-run (EI, 2010). In-service training programs are relatively established in parts of East Asia and the Pacific. The length of these programs can be short, such as in Cambodia where 5 days per year are dedicated to in-service training for teachers and 7 days of training on management and monitoring and evaluation for pre-primary principals (Shaeffer, 2015; SEAMEO, 2015). Training is more robust in Vietnam, where two months each year are reserved for in-service training and take place during summers and on weekends (Shaeffer, 2015).

Accreditation authorities can be national or local; training providers may be public or private

Training and accreditation can be implemented by governments at the national, regional, and local levels depending on the structure of the education system. A number of countries in Southeast Asia certify pre-primary teachers through national government authorities. In Malaysia and Thailand national bodies also conduct annual teacher performance assessments through the Inspectorate and Assurance of Quality Division and the Office of National Education Standards and Quality Assessment, respectively (SEAMEO, 2015). In countries with more decentralized systems, training and accreditation may occur at the local, district, or provincial levels, such as in Lao where authorities are local ministry offices. In Vietnam, monitoring and performance assessments also occur at the local level and are conducted by pre-school principals or district and provincial supervisors (SEAMEO, 2015). In Morocco, pre-school resource centers in each province provide support to teachers, though there are limited data available on what that support entails (ILO, 2012).

Some private foundations and NGOs have sought to fill gaps in both pre-service and in-service training provision. The Madrasa Resource Centre preschools in East Africa, supported by the Aga Khan Foundation, provide a two-year training program which includes a one-month orientation, 78 weeks of work-based training, additional in-service training sessions, and ongoing support and mentoring during the first year in the workplace (Sun et al., 2015). In Namibia, the National Early Childhood Development NGO Association provides the only formal training for ECCE teachers in community-based centers through a one-year ECDE certificate course for caregivers and teachers (Open Society Initiative for Southern Africa [OSISA], n.d.). In Trinidad and Tobago, the SERVOL Regional Training and Resource Centre provides initial and ongoing training for ECCE teachers, field

officers, and administrators in the country as well as other parts of the Caribbean. SERVOL is also responsible for monitoring public ECCE centers in Trinidad and Tobago (ILO, 2012; SERVOL, n.d.). In South Africa, training is conducted by NGOs and tertiary institutions, though accreditation is granted by the South African Qualifications Authority (SAQA). These accredited programs also offer continuous on-the-job refresher programs (Awopegba, 2010).

In addition to government bodies and NGO providers, training and certification can be provided by institutions of higher education. In the Gambia, the College of Gambia was the only teacher training institute in the country as of 2010, though some faith-based organizations provide additional in-service training to their own staff (EI, 2010). In addition to providing ECCE degrees for free, *Institutos de Formacion Superior*, or Institutions of Higher Training in the Dominican Republic also offer in-service training for existing teachers to specialize in ECCE (Alcántara, López, Mendoza, & Rodriguez, 2012). The University of Namibia offers both a Bachelor's and Master's degree in ECD, with the former equipping teachers to work in both pre-primary and primary (grades 1 through 4) settings. Teachers with this degree are expected to be able to teach in both English and a local language and via a child-centered approach which "presupposes that teachers have a holistic view of learning, valuing the learner's life experiences as starting points for their studies" (Wiseman & Popov, 2015, 88-9).

Kenya uses a combination of different training and accreditation authorities. The Ministry of Education is responsible for training, teacher certification, and curriculum development. The National Center for Early Childhood Education (NACECE), within the Kenya Institute of Education, runs a number of national training centers, and disseminates curricula at the country level. To complement national efforts, District Centers for Early Childhood Education (DICECE) provide training for pre-

school teachers and other personnel at local levels (Nganga, 2009; Mbugua, 2004).

Teachers need support and resources to work with children from diverse backgrounds

ECCE services can be the least accessible and of the poorest quality for the most disadvantaged populations. The diversity of the workforce plays a role in whether these children enroll in ECCE and participate in programs that are culturally and linguistically relevant. Ball (2011) highlights the need for education systems to “recruit teachers who are fluent in the language of instruction at the level of cognitive academic language proficiency in reading, writing, and speaking” and “provide pre-service and in-service teacher education to ensure that teachers can engage in effective pedagogy, be culturally competent, have subject-matter knowledge for the academic level they teach, and can teach energetically with very young children” (p. 7). Yet, some countries in Southeast Asia such as Vietnam have a particular shortage of teachers from ethnic and linguistic minority groups. Minority ethnic women in general tend to occupy the “least qualified positions with the lowest wages” (ILO, 2012, 45). Minimum education requirements may keep adults from these diverse groups and who speak children’s mother tongue from entering the profession due to low levels of education, despite evidence demonstrating that “children learn best in their mother tongue as a prelude to and complement of bilingual and multilingual education” (Ball, 2011, 6). In an effort to recruit more teachers and diversify the workforce, Cambodia is actually lowering requirements from an upper secondary school diploma to a lower secondary school education (Shaeffer, 2015).

Many ECCE practitioners, both in OECD countries and LMICs, do not have the proper support for children with special needs. Disabled children are severely underrepresented in early childhood programs (Woodhead, 2014). A very small study of 10 early childhood educators in

Ghana, including 6 kindergarten teachers, revealed that many may understand what inclusion means, but do not have the training, materials or support (such as teacher aides or other additional staff) to manage an inclusive classroom. One of the most significant problems is large class sizes, which makes it difficult for teachers to provide the necessary individualized attention that students with special needs often require (Ntuli & Traore, 2013).

Additionally, it is important to note the critical role ECCE staff can play in supporting children who have a range of needs, including suffering from poor health, nutrition, or abuse, as these factors can have a significant effect on children’s development and learning. There is limited evidence on delivering health and nutrition interventions for 3- to 6-year-olds in center-based ECCE centers, especially on a large-scale, in low-resource contexts, and coordination across sectors is a challenge (Woodhead, 2014). More attention is needed on effective models to train ECCE personnel across disciplines as well as to work in partnership with those working in other sectors relevant to children’s well-being.

F. What Are ECCE Personnel’s Working Conditions?

Status and pay are poor relative to primary teachers, leading to low satisfaction and high turnover

Many pre-primary teachers do not enjoy the same status as their primary counterparts. In Malaysia, for example, nearly all primary teachers (80 percent) are civil servants, while only 20 percent of pre-primary teachers share this status (SEAMEO, 2015). Particularly in countries where pre-primary education or ECCE is not part of the formal education system, fewer teachers may hold permanent positions. A number of countries hire pre-primary teachers on a contract basis, which is common in Sub-Saharan Africa (ILO, 2012), as well as in

other countries, such as the Philippines, where 80 percent of pre-primary teachers are contracted part-time (Shaeffer, 2015). And, in comparison to teachers in primary and secondary school, the majority of ECCE teachers are not unionized, especially in the private sector (EI, 2010). High wages, as well as paid vacation time and other benefits, positively influence job satisfaction and motivation and, indirectly, the quality of their interactions with children (OECD,

2012). Salaries in many OECD countries are relatively high or considered equivalent to those of primary teachers such as in Denmark and Norway, where public ECCE educators are estimated to receive salaries between 85 to 100 percent of primary teachers' salaries (ILO, 2011). The United States is an exception, however, as many ECCE teachers are employed in the private sector and receive a significantly lower salary (EI, 2010).

Figure 14: Is the remuneration of pre-primary teachers entering the field competitive?

< 50% of primary teacher salary	50 - 74% of primary teacher salary	Between 75 and 100% of primary teacher salary	Parity in pay (100% of primary teacher salary)
Armenia Mauritius Samoa Tuvalu Republic of Yemen	Burkina Faso	Albania Belize Colombia Kyrgyz Republic Seychelles Tanzania	Bulgaria

Adapted from Systems Approach for Better Education Results (SABER), World Bank Group, Accessed July 2015

However ECCE personnel in low-and middle-income countries generally suffer from lower pay (see *Figure 14*). In most parts of the world, pre-primary education continues to receive less support than other education levels. Though not unique to Sub-Saharan Africa, this issue is especially prevalent in a number of countries, where preschool teacher salaries can be irregular and as low as 50 USD per month (UNESCO-BREDA, 2010). In Kenya, even though most ECCE centers are public and attached to local primary schools, they do not receive equivalent government funding. Teachers' salaries are primarily supported by parents and local communities and can vary dramatically depending on enrollment and a family's ability to pay (ILO, 2012). Similarly, practitioners in Lesotho and caregivers in Malawi often receive only stipends paid by parents, and some even working on a voluntary basis. In Ethiopia, teachers receive particularly low salaries in public kindergartens, leading to a shortage of

teachers and high PTRs (UNESCO-IICBA, 2010).

The private sector – in both OECD and other countries – does not always guarantee the same remuneration as public school positions, paying as little as possible to keep costs down (Sun et al., 2015). Wages and other benefits such as paid leave, insurance, social security, and professional development opportunities tend to be weaker in some private sectors in Sub-Saharan Africa, such as Ghana and Nigeria (EI, 2010). In Brazil, salaries are reported to be lower in private schools, particularly those in poorer areas and in community schools where teachers earn the national minimum wage (EI, 2010). In the Philippines, private employers are often “unable or unwilling” to provide the support for teachers to pass the licensure examination and meet the eligibility criteria that would guarantee better wages and benefits (Shaeffer, 2015, 16).

The range of salaries in the Dominican Republic

In 2012, ECCE teachers in the Dominican Republic earned about RD \$8,000 (or USD 178) monthly for each shift taught, with many teachers working two shifts per day (Alcántara, 2012). However, Dominican salaries can vary depending on position and institution. An IDB study from 2011 found that three public institutions in Santo Domingo – funded by the Office of the First Lady, the National Council for Children and Adolescents, and the Dominican Social Security Institute – paid teachers anywhere from USD 185 to 370 monthly, with the lowest of these wages paid by the Dominican Social Security Institute. Teacher aides earned anywhere from USD 53 to 281 per month, and educational coordinators in one institution earned slightly less than a teacher, at USD 308 per month (Araujo et al., 2013).

Low pay can lead to high turnover, creating an unstable learning environment that is necessary for children's development (OECD, 2012). In Kenya, annual turnover can be as high as 40 percent (ILO, 2012). Turnover further exacerbates teacher shortages in Namibia, partially due to a large portion of the population being affected by HIV/AIDS (Penn, 2008). In Ghana, the private sector is especially vulnerable to turnover, where most teachers are "young female high school graduates ... preparing for higher education" and tend to work in private ECCE centers in the short-term (EI, 2010, 48). In addition to poorer financial benefits, because they hold the same qualifications as primary teachers and have "limited opportunities for promotion" in pre-school and kindergarten, ECCE teachers in the Philippines often transition to the primary school system (Shaeffer, 2015, 16).

Some countries have demonstrated efforts to improve historically low remuneration for ECCE personnel. Between 2002 and 2008, for example, salaries for ECCE teachers in Moldova doubled (Sun et al., 2015). ECCE teachers can receive pay and benefits similar to those in other parts of the education system, such as in the Dominican Republic, Togo, and the Philippines, but this often depends on teachers meeting certain qualifications (ILO, 2012; EI, 2010; Shaeffer, 2015). Some Southeast Asian countries offer teachers a number of benefits in addition to their salaries. Public school teachers in the Philippines receive "an economic relief allowance, a uniform allowance, a year-

end bonus, vacation pay and even a chalk allowance" and, depending on the results of annual observations and evaluations, can earn bonuses or tenure (Shaeffer, 2015, 12). Pre-primary teachers in Myanmar receive 3 months of maternity leave and, at retirement, Cambodian teachers with 30 or more years of service can receive 80 percent of their salary and a "six-month lump sum" (SEAMEO, 2015, 15). In countries where pay is still relatively low, bonuses may help to offset this. In Uruguay and Egypt, according to 2002-2003 data, public pre-primary teachers could receive bonuses that made up nearly half (45 percent) of their annual salary (Wallet, 2006).

Working hours are typically similar for pre-primary and primary teachers

Data from 2002-2003, the most recent comparative information available, estimated annual working hours for pre-primary teachers in 14 middle income countries to be between 600 and 1,000, with a median of 765 hours. Actual hours worked were not significantly different for primary school teachers, though there were some exceptions. In the Philippines, pre-primary teachers worked 600 hours annually, compared to twice that amount for primary teachers. Similarly, in India, pre-primary teachers worked about 700 hours, compared to 1,000 hours for primary teachers (Wallet, 2006).

In 2011, teachers in Ghana worked about 6 hours in the classroom and 2 additional

hours of preparation and planning. In the Philippines, about 3 hours each day were spent in the classroom, with approximately 8 hours worked overall (ILO, 2012). In the Dominican Republic, most teachers work two shifts each day of approximately 4 hours each. On average, these ECCE classrooms will have upwards of 30 students, for a total of more than 50 students per day, a challenge for teachers who work in different locations which, especially in rural areas, can be far from one another (Alcántara et al., 2012). A limited number of developing countries now pay teachers for their planning and preparation outside of the classroom: both Thailand and the Philippines, for example, provide 10 paid hours per week for this.

Heavy work schedules and lack of compensation for additional planning hours can have a negative effect on job satisfaction and cause stress for staff, affecting the quality of their work and, indirectly, child outcomes (OECD, 2012c). In half of Southeast Asian countries, policies that set a maximum number of weekly hours for pre-primary teachers help to limit these stressors. In Brunei, this limit corresponds to 39 weekly classroom hours plus 3 hours of “non-contact time,” while in Vietnam this is more than 40 hours. Across the region, the median number of hours worked per week is between 21-30 hours, comparable to primary school teacher schedules (SEAMEO, 2015, 16).

Poor monitoring and evaluation capacity leaves gaps in data and makes it difficult to improve conditions

Despite what the many trends and challenges included in this review may illustrate about the ECCE workforce, the field lacks good and frequent data as a result of poor monitoring and evaluation practices. In rural and remote areas, often where there are educational settings most in need of support, inspectors and others responsible for monitoring ECCE practices “tend to go to [these areas] less often” (Sun et al., 2015, 16). And, while there is a global shortage of trained teachers, there is additionally

a shortage of staff who are trained and qualified to monitor personnel. Systematic monitoring and evaluation becomes more difficult due to the diversity inherent to ECCE programs, as services can be formal or non-formal, serve a variety of ages, and operate using many different funding mechanisms (Sun et al., 2015).

Even when monitoring and evaluation practices can take into account these various challenges, many ECCE programs in low- and middle-income countries are not even registered with the government. The majority of ECCE services in Namibia, for example, go unregistered, often because minimum registration standards are too demanding for ECD centers to achieve (Penn, 2008).

Good practices: Ongoing support and training

In Mozambique, at least once per month, program monitors from civil society organizations (such as Save the Children or Aga Khan) visit classes at community-run *escolinhas* to observe attendance, classroom activities, and teacher interactions and later give feedback to instructors. Monitors are also involved in teacher training and serve as a liaison between communities and government officials when a situation requires government involvement (World Bank, 2012).

G. Summary and Key Takeaways

- ▶ The ECCE workforce is younger than teachers at other educational levels in LMICs, and predominantly female. Globally, developing a more gender-balanced workforce is a challenge.
- ▶ Pre-primary education is increasingly integrated with the formal primary schooling system in many regions to boost access and quality though this

does not necessarily lead to parity in training and working conditions between pre-primary and primary teachers.

▶ There is a lack of good data regarding the ECCE workforce due to poor monitoring and evaluation practices.

- ▶ The majority of LMICs requires only a secondary education to become a pre-primary teacher although regions such as Southeast Asia and Latin America and the Caribbean generally require post-secondary or tertiary education. In contrast, OECD countries have higher minimum requirements of at least 3 years of post-secondary education for pre-primary teachers.
- ▶ Many ECCE teachers do not meet the minimum requirements. Shortages of qualified teachers trained to national standards have implications for access and quality. Countries also have lower proportions of pre-primary teachers than primary teachers who are trained to national standards.
- ▶ Teachers working in rural areas, private settings, and non-formal programs tend to have lower qualifications without specialization in ECD or education.
- ▶ Professional development opportunities are more limited and infrequent in LMICs than in OECD countries.
- ▶ There are varying beliefs among teachers on what children should learn, although trained and qualified teachers tend to support child-centered learning and practices.
- ▶ In many countries around the world, there are shortages of qualified personnel from diverse backgrounds. Teachers also do not have the proper support and resources to work with children with special needs.
- ▶ The status, pay, and benefits for ECCE personnel are poorer than those of primary teachers which leads to low retention rate. Staff working in the private sector in OECD countries and LMICs tend to have lower pay.

Conclusion and Implications for the STEPP Project

This review of evidence, trends, and issues highlights the urgent need for policy attention to the ECCE workforce in low- and middle-income countries. Though the situation can vary greatly depending on country context as well as on characteristics of ECCE settings, there is generally a disconnect between the political discourse around the importance of early learning and the actual support provided to pre-primary teachers in many developing countries. There is not only a shortage of qualified teaching staff in many countries, but also limited capacity and resources to educate new professionals. Those already in the field often have insufficient access to relevant, quality training and mentoring to ensure quality learning environments. Poor wages, working conditions, and limited career opportunities are likely to exacerbate recruitment and retention of skilled and motivated workers. This concluding section identifies areas for future research and specific recommendations for the development of the *Survey of Teachers in Pre-Primary Education* (STEPP).

A. What Are the Knowledge Gaps Regarding ECCE Personnel In LMICs?

There is a need for more complete and consistent cross-national data about the early childhood workforce, including those working in the private sector and in less formal arrangements. Our review surfaced several knowledge gaps for which the following sample research questions can help guide future data collection. Questions

target ECCE personnel more broadly to additionally address the lack of available information about assistants/auxiliary staff and directors/leadership.

- ▶ What are national minimum training requirements for ECCE personnel? What proportion of personnel complies with these qualifications?
- ▶ What professional competencies are personnel expected to possess when entering the workforce?
- ▶ What strategies do education systems employ to recruit and deploy qualified personnel?
- ▶ What institutions and other training providers exist for personnel in public, private, and less formal settings? At national and local levels?
- ▶ What is the duration of pre- and in-service training courses (both formal and informal)? What is the content quality³ of these trainings? How relevant is this content to the settings and challenges personnel encounter?
- ▶ What are core responsibilities of ECCE personnel, their daily routines, and how much time do they allocate to their various activities?

3 Content including references to inclusive education catering to children with special needs and from diverse backgrounds, such as ethnic minorities, multilingual, vulnerable children, and other major excluded groups

- ▶ What are the working conditions where ECCE personnel are found: How many hours do they work? What salaries do they earn and what are other financial and non-financial benefits? What are turnover rates?
- ▶ What are the classroom or group sizes with which personnel are working (i.e. not just teacher-child ratios)?
- ▶ What are personnel attitudes and beliefs about their role, status, career mobility, children's learning, curriculum, and effective practices? Towards children with special needs and from diverse backgrounds?
- ▶ What pedagogical practices (including instructional practices and the level of emotional support) are emphasized and observed?
- ▶ How are ECD program leadership and staff organized? How do staff interact at various levels, among teachers, leadership, parents, and professionals in the same or a different sector?
- ▶ What are the leadership styles of managerial staff? What role does leadership play in supporting the professional needs and pedagogical implementation of teachers?
- ▶ What type of teacher training, and of what length, are needed to impact child outcomes?
- ▶ What is the relative impact of pre-service compared to in-service training?
- ▶ What is the relative importance of training (pre- or in-service) compared to pupil-teacher ratios (PTRs)? Compared to other teacher characteristics?
- ▶ What is the impact of teacher beliefs on child outcomes (not just pedagogical practices)?
- ▶ Is there a causal relationship between remuneration/benefits and turnover rates? Between turnover rates and child outcomes?
- ▶ What is the relationship between certain working conditions (e.g. hours, wages, or professional status) and child outcomes? Which conditions matter most?

B. What Do We Know about The STEPP Pilot Countries?

The STEPP Project provides the opportunity to collect important and often unknown information on the current capacity, practices, and needs of pre-primary teachers that are relevant to access to and quality of ECCE provision in low-resource contexts. These country-level and cross-national comparative data will provide valuable guidance to policymakers seeking to better understand and support ECCE professionals and their work with young children. The current list of pilot countries is quite diverse, according to our initial desk review, and will further elucidate many of the trends and issues that we identified in our review and likely identify others (summarized in *Figure 15*). The table on the following page illustrates significant findings on the ECCE workforce for this specific set of countries including:

In addition to the need for greater data around these questions, future research and evaluation should focus on teasing out the relative importance of interventions focusing on pre-primary teachers from other types of support (e.g. nutrition interventions). There is also a need for more rigorous qualitative and quantitative evaluations of scaled up or national-level programs and more geographic coverage of underrepresented developing regions (e.g. Arab States and Central Asia). Overall, our review highlights several gaps in the evidence including:

- ▶ What is the impact of a teacher's level of education on pedagogical quality?

- ▶ A wide variation of minimum academic qualifications level required to work as pre-primary teachers. Some countries do not have any specified standards or minimum requirements. In other countries, teachers are only required to hold a lower secondary qualification and undergo very brief training.
- ▶ A highly uneven gender balance is found in the pre-primary workforce with a high proportion of female workers. Namibia is an exception with women comprising only one-third of pre-primary teachers.
- ▶ A wide range of PTRs, with most countries falling within the range of 10:1 to 30:1. The Philippines has a relatively high PTR in the Southeast Asian region. In addition, several countries reported low PTRs including FYR Macedonia and Moldova. Differences in working hours across countries and data are unavailable in a number of countries. Some of the countries do not differentiate between teaching hours and extra-curricular activity (e.g. administrative, planning) hours and may result in higher total working hours.
- ▶ Private sector provision is high in countries with more than 75 percent of pre-primary enrollment in the Arab States including Morocco and Oman. Macedonia and Moldova have relatively small private sectors, which corresponds well to the strong public sector in Central and Eastern Europe.

Figure 15: Characteristics of the ECCE Workforce in Potential Pilot Countries, 2013 data

Country	Minimum requirements	Female proportion of the ECCE workforce	Pupil-Teacher Ratio (PTR)	Working hours	Proportion of private enrollment
Dominican Republic	University degree in early childhood or basic education	94.2%	23.4	2 shifts per day, 4 hours each	35.5 (2012)
Egypt	Bachelor's degree in education/ ECD; MoE offers in-service training for teachers and supervisors	98.0	26.9	35-36 hours/ week	23.8
FYR Macedonia	University education or 2-years postsecondary	99.4 (2012)	8.0 (2012)	N/A	N/A
Ghana	Basic-level teacher training courses last 3 years	83.0 (2014)	32.5 (2014)	8 hours/day, including 6 in the classroom	24.6 (2014)
Kenya	Post-secondary non-tertiary education	82.2 (2012)	24.1 (2012)	N/A	37.7 (2009)
Malaysia	University education ranging from 1-3 year diplomas to 4- year Bachelor's degree	96.7 (2010)	19.7 (2012)	17.5 hours/ week of instructional time	42.2 (2012)
Moldova	Tertiary professional colleges and universities (with programs ranging from 2 to 4 years) award diplomas to both preschool and primary teachers*	100.0 (2012)	9.7 (2012)	39.8 hours/ week	0.3
Morocco	1 year professional certificates are offered by University of Mohammed V to work with 4-5 year olds*	71.3	18.0	32 hours/ week	90.5 (2014)
Mozambique	(For community-based <i>escolinhas</i>) 5th grade education, 2 weeks of initial training, and at least one day of ongoing training per month (community-based ECD)*	N/A	33 (2003)	N/A	N/A
Namibia	Grade 6 education with 6-weeks pre-service training for teachers	33	26.6 (1999)	30 hours/ week	17.8 (2012)
Oman	Upper Secondary education	98.4	25.7	N/A	76.5
Philippines	Bachelor of Science specializing in early childhood or preschool education with at least 18 units in ECCD	97.0 (2007)	34.7 (2007)	8 hours/day, including 3 in the classroom	36.8 (2009)
Togo	Secondary level diplomas. In-service training conducted in a few weeks or a month	91.9	29.2	N/A	37.7
Trinidad and Tobago	University degree in ECCE with 3-5 years in the field	100 (2005)	13.5 (2007)	N/A	83.1 (2007)
Vietnam	Secondary education certification with two months each year for in-service training	96.0	18.9	N/A	14.2

*The authors were unable to find information regarding national minimum teacher training requirements; included here are samples of available pre-service training or qualifications offered by some institutions

Sources: Alcantara et al., 2012; Araujo et al., 2013; Bruns, et al, 2010; EI, 2010; GCE & EI, 2012; ILO, 2012; Penn, 2008; SEAMEO, 2015; Shaeffer, 2015; Shehadeh, 2008; Sun, et al., 2015; UNESCO IBE, 2006a, 2006b, 2006c, 2006d, 2006e, 2006f; UNESCO IBE, 2010, 2011; UNESCO Institute for Statistics, accessed July 2015.

C. Recommendations of Priority Themes and Indicators

Based on our analysis in this report, and consideration of other surveys of teachers, we recommend a series of themes and indicators for inclusion in the STEPP Project (see Figure 16). The following criteria were considered: (a) relevance for quality; (b) relevance for access; (c) data lacking in

LMICs; and (d) contextual data. Several criteria may be relevant for each theme. We focus on pre-primary teachers though many of these indicators would be relevant to directors and auxiliary staff as well.

Bolded indicators highlight those which may be particularly unique or critical for a survey targeting personnel in developing countries.

Figure 16: Suggested themes and indicators for the STEPP Project

Theme	Indicators	Rationale
Preparing and developing pre-primary education personnel		
Initial education (pre-service training)	<ul style="list-style-type: none"> Qualifications, skills and initial education received (level of formal education; vocational/further education; length/duration; content of studies; type of provider/institution; practicum) Perceived effectiveness of pre-service training Degree of satisfaction with pre-service training Training barriers, unmet needs, and potential solutions 	<p>Relevant for quality;</p> <p>Relevant for access</p>
Professional development (in-service training)	<ul style="list-style-type: none"> In-service training received and opportunities for continuous professional development (frequency; duration; content including reference to inclusive education to support children from diverse background/major excluded groups and with special needs; format including work-based training; type of provider) Access to ongoing support through coaching, mentoring, learning circles Support from program manager/director in accessing professional development opportunities Perceived effectiveness of in-service training Degree of satisfaction with in-service training Training barriers, unmet needs, and potential solutions Opportunities to obtain advanced qualifications 	<p>Relevant for quality;</p> <p>Relevant for access</p>
Ensuring quality learning environments and practices		
Pedagogical beliefs and perceptions	<ul style="list-style-type: none"> Beliefs about children's care, development, and learning Attitudes toward children with special needs and from diverse backgrounds Beliefs about quality pedagogy, curriculum practices/changes and environments Beliefs about professional role in ECCE Perceptions about parent roles in ECCE Perceptions about level of support from center managers/directors to implement pedagogical practices Barriers to effective pedagogy and potential solutions Barriers to quality learning environment and potential solutions 	<p>Relevant for quality;</p> <p>Data gap</p>
Pedagogical & professional practices	<ul style="list-style-type: none"> Time allocation across activities/content areas Pedagogical philosophy (child- or teacher-centered) and practices (especially related to class management styles and interactions) Types of activities across different areas of the curriculum Use of individualized or differentiated teaching Strategies to monitor and assess children's progress Collaboration with colleagues, supervisors and other professionals Communication with and engagement of parents Support for children from diverse backgrounds (vulnerable children, ethnic and linguistic minority groups, children with special needs) Opportunities and incentives for innovative practices 	<p>Relevant for quality;</p> <p>Data gap</p>

Attracting, motivating, and retaining pre-primary personnel		
Working conditions & job satisfaction	<ul style="list-style-type: none"> • Job satisfaction and areas for improvement • Perceived status of the profession • Motivation for working in ECCE and career goals • Challenges in being motivated and effective at work • Working hours/schedule (class preparation, teaching & administrative tasks, etc.) • Work load and responsibilities • Additional staff support available (aides, assistants, etc.) • Salary/wages (incl. frequency of pay), benefits, incentives/recognition/rewards • Opportunities for promotion or career advancement • Type of contract (permanent, part-time, etc.) and status (e.g. civil servant) • Likelihood to leave the profession • Staff recruitment strategies and challenges* • Staff turnover/attrition rate and potential causes* • Perceptions on leadership/management and resource allocation 	<p>Relevant for quality;</p> <p>Data gap</p>
Understanding the characteristics of personnel and the settings where they work		
Personnel characteristics	<ul style="list-style-type: none"> • Age/gender/birth country/languages spoken • Job title • Qualifications, credentials • Years in current position and years in the field • Number of job changes in past X years • Job titles and roles of assistants and other staff 	Context
Setting characteristics	<ul style="list-style-type: none"> • Location type (rural, urban, peri-urban, etc.) • Physical setting (attached to primary school, church, home, center etc.) • Ages served in the setting* • Eligibility requirements for child enrollment* • Type of provider (public/private; for-profit/nonprofit; formal/informal)* • Sources of funding* • Costs for attending (including uniforms, etc.)* • Total number of children and by age* • Operating hours* • Curriculum or pedagogical approach used in the center* • Staff views on adequacy of facilities, materials, and resources • Gender/diversity of class composition (observed) • Group/classroom size (observed) • Child to teacher ratio (observed) • Organization of the learning environment (observed) • Organization of leadership in the setting* 	<p>Context;</p> <p>Relevant for quality;</p> <p>Relevant for access</p>

**To be asked of center manager/director only*

D. Lessons for the Survey Design

While not the main focus of the review, there are three main lessons we have identified for the scope and methodology of the STEPP project. First, given the diversity of arrangements and conditions for ECCE personnel by type of setting and

geographical location, it would be important to sample personnel from both urban and rural settings, as well as from both public and private (for-profit and non-profit) settings. Ideally, the sample would include the full range of pre-primary provision for 3-6 year olds that exists in the target country, including non-formal settings (and possibly home-based).

Second, if resources permit, we recommend conducting a sub-study with observations – either live or videotaping – of a sub-set of pre-primary teachers to compare reported and actual practices. Observations of process quality would complement data provided by teachers (and managers) while expanding the literature on the nature of adult-child interactions and practices in LMICs. If the cost of an in-depth observation study is prohibitive, an alternative would be to train enumerators to administer a simple checklist covering, for example, the organization and climate of the learning environment, available play and learning materials, and the type of staff-child and child-child engagement and activities. Although a few existing tools have been developed for or adapted to developing contexts, field testing for relevance in STEPP countries is essential.

Third, it is important to keep in mind that both teachers and children, to varying degrees, face enormous inequality in their educational experiences. While many of the challenges they face are not entirely distinct from the issues within ECCE in OECD and higher income countries, they are often more pronounced in these low- and middle-income contexts. Many of these children and teachers are dealing with poverty, violence, poor health and nutrition, and social and economic marginalization. Any survey piloted in these contexts needs to provide opportunities to capture the diversity and inequality inherent to these populations.

E. Conclusion

The growing empirical evidence on the importance of investing in young children for their growth, development, and learning throughout their lives has led to a heightened focus on expanding quality ECCE. At the core of improving access and quality ECCE is developing competent, well-trained, and well-supported teachers. Yet, information on ECCE personnel, especially in low- and middle-income countries, is often limited

and inconsistent within and across countries. Bridging the data gap through systematic collection and dissemination of information on ECCE personnel training, working conditions, beliefs, and practices can help illuminate challenges where focused attention and investment are most needed. These insights will shed light on current and potential needs that can guide future resources toward supporting teachers and their well-being so they can create the best development and learning environments for children.

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