



<b>Title</b>	<b>Quality early childhood care and education in low resource level countries in Asia</b>
<b>Author(s)</b>	<b>Rao, N; Sun, J</b>
<b>Citation</b>	<b>Quality early childhood care and education in low resource level countries in Asia. In Marope, PTM &amp; Kaga, Y (Eds.), Investing against Evidence: The Global State of Early Childhood Care and Education, p. 211-230. Paris: UNESCO Publishing, 2015</b>
<b>Issued Date</b>	<b>2015</b>
<b>URL</b>	<b><a href="http://hdl.handle.net/10722/217890">http://hdl.handle.net/10722/217890</a></b>
<b>Rights</b>	<b>Creative Commons: Attribution 3.0 Hong Kong License</b>

## Chapter 11

---

# Quality early childhood care and education in low-resource level countries in Asia

*Nirmala Rao and Jin Sun*

## Introduction

The *Education for All Global Monitoring Report, Strong Foundations for Early Childhood Care and Education* (UNESCO, 2006), provided compelling reasons for investment in the early years and summarized research on the short and long-term benefits of ECCE programmes for children and nations. Studies on early brain development have shown that the brain develops most rapidly in the first 3 years of life and that it is positively affected by environmental stimulation (Shonkoff and Phillips, 2000). Research has also shown the benefits of ECCE to child development, school readiness (Engle et al., 2007; 2011) and the economic returns to individuals and governments (Heckman, 2004; Lynch, 2004; see Chapter 3, this volume). Further, investing in early child development promotes children's rights to survival, protection, development, and to participation in early education. Evidence equally shows that it is not just access to ECCE programmes that matters, but that the quality of those programmes matters even more. In particular, high quality ECCE programmes (i) offer support to parents in a child's earliest years; (ii) integrate educational activities, nutrition, health care and social services; (iii) provide relevant educational experiences; and (iv) ease the transition to primary school.

This chapter presents empirical studies which compared the development of children who had attended ECCE programmes of differing quality with that of those who did not have access to those services. These studies provide evidence on the relationship between the quality of ECCE and child outcomes in low-resource level countries in Asia. Their findings strengthen the case for providing high quality ECCE for all children as a means of promoting equity. Indeed, equity considerations should guide ECCE programme development, and 'equity' in ECCE refers to both access to services and their quality (Equity = Access + Quality) (Britto et al., 2011).

# Conceptualizing and defining quality ECCE programmes

## Defining quality

A distinction has been made between structural and process dimensions of programme quality (Lamb, 1998; Phillips and Howes, 1987). Structural measures include teacher-child ratios, staff qualifications, teaching experience and stability, health and safety, and the physical setting while process refers to the quality of interactions between teacher and child. Definitions of high quality ECCE vary across contexts since there are wide variations in economic development, resource availability, and cultural beliefs. Nevertheless, there is some agreement about the factors which define quality in formal and informal programmes regardless of circumstance, including the physical and psychological environment, curriculum, learning and teaching approaches, teacher-child interactions, programme management and community integration (Association for Childhood Education International, 2006). Among these, teacher-child interactions are considered the most important determinant of quality (UNESCO, 2007) and the vehicle for this interaction is the curriculum.

## Measuring quality

Teacher-child ratios and children's performance on cross-national tests of achievements are two proxies typically used for educational quality in UNESCO's EFA Global Monitoring Reports. However, these two indices are not totally relevant for the early years (0-5). Small sample size, stringent teacher-child ratios are important for responsive teacher-child interactions; but this is highly affected by cultural beliefs (Tobin, 2005), and it is difficult to achieve a feasible common metric for the various forms of early childhood services. Further, good quality ECCE is holistic and is concerned with more than children's academic achievement.

There are several challenges associated with the measurement of the quality of ECCE programmes. We find a range of ECCE programmes all over the world, some provided in formal settings such as primary school or pre-school institutions, while others take place in informal or non-formal settings (e.g. community-run, home-based or parent education programmes). Programmes for children under 3 years tend to be holistic in nature and include health, nutrition, hygiene and social protection in

addition to cognitive, social, emotional and physical development (Copple and Bredekamp, 2009). Further, some programmes include micronutrient supplementation, support to enhance maternal and child health and support for families. Because of the range of programmes and the varying needs of children of different ages, there exist different versions of commonly used tools, such as the Early Childhood Environment Rating Scale – Revised (ECERS-R) (Harm et al., 1998), to assess programme quality. The ECERS-R is used to evaluate the quality of centre-based ECCE for children from 2 ½ to 5 years, while the Infant Toddler Environment Rating Scale – Revised (ITERS-R) is designed for use for the birth to 2½ age range. The first ECERS scale was developed in the U.S. but has been adapted for use in the United Kingdom (ECERS-E) (Sylva et al., 2006), Bangladesh (Aboud, 2006; Moore et al., 2008), Cambodia (Rao and Pearson, 2007) and Tamil Nadu, India (TECERS) (Isley, 2001; Rao, 2010). In addition to differences in definitions and standards for quality across countries, the use of a tool developed in one country or another also raises issues related to linguistic, cultural, functional and metric equivalence across countries (Pena, 2007).

Therefore, a valid measure of quality should include assessment of all programme targets. It should also assess the extent to which the philosophy of a programme is evident in the early childhood setting. In addition to aligning measures of quality with programme goals, it is important to formulate guidelines to ensure reliable measurement. Assessment tools should also be appropriate for the age range of children studied and the type of early childhood programme (Zaslow et al., 2011).

Measures of structural quality, such as teacher-child ratios, teacher qualifications and experience, are relatively easy to obtain and have been used in measurement of ECCE quality (e.g., Cost, Quality, and Child Outcomes Study Team, 1995). However, process measures of quality, such as teacher-child interactions and implementation of learning activities, are particularly useful as they provide information about their day-to-day functioning. In short, contextually-sensitive standards (and indicators) appropriate for both a variety of programmes and a wide age range of children are necessary to measure effectively the quality of ECCE programmes.

### Regulation of quality

In most countries in the developing world, the authority to enforce standards for operating early childhood programmes rests solely with the government, but the regulation of quality is problematic in some contexts. For example, in

some countries (e.g. India), there are no requirements for teacher qualifications in the private sector and in others (e.g. China) rural pre-schools are not able to meet government standards for teacher qualifications (Rao and Sun, 2010).

It should also be noted that governments have typically focused on input quality (structural quality) or output quality (child outcomes), but not on the quality of interaction within a programme (process quality) (Rao and Sun, 2010).

## Importance of high quality ECCE in low-resource environments in Asia

High quality ECCE should be a right for children worldwide but it is especially important for those in low-resource environments such as can be found in Asia which, in some regions, has poor human development indicators and high levels of educational poverty.

### Tens of millions of vulnerable and disadvantaged children need high quality ECCE

There are wide variations across and between sub-regions and countries on many human development indicators in the Asian region which has 3.5 billion people and includes five of the E-9 high population countries (Bangladesh, China, India, Indonesia and Pakistan). These five countries alone account for 35 per cent of the world's population (Rao and Sun 2010), and four of them are less developed nations. The region has millions of children who are vulnerable and disadvantaged and in dire need of high quality ECCE. Access to early childhood services reduces inequalities and is particularly important for these children as they typically have less stimulating family environments and fewer resources for learning in the home and in the community. In these contexts, ECCE has 'helped level the playing field for disadvantaged children as they entered primary school' (UNESCO, 2006, p. 113).

### High quality ECCE improves countries' poor human development indicators

Many countries in South, South-East and West Asia have very high rates of infant mortality and stunting (Rao and Sun, 2010) and high quality ECCE

services are particularly important in helping to decrease these rates. Without quality ECCE, these countries are also unlikely to attain Goal 1 of the EFA goals, 'to expand and improve comprehensive early childhood care and education'.

### Rapid expansion impacts the ECCE quality

There has been a rapid expansion in ECCE participation in some parts of Asia, but this has led to concerns about an associated decrease in quality. In South and West Asia, the average teacher-child ratio increased from 36 in 1999 to 40 in 2007 (UNESCO, 2010a). Although notions of appropriate teacher-child ratio might vary across cultures, in a classroom with such high teacher-child ratio, it is almost impossible for the teachers to allocate sufficient individual attention to a child.

### ECCE quality and child development in Asia

Children from socially and economically disadvantaged backgrounds who have received ECCE have better developmental outcomes than those who have not (see Barnett, 1998; Burger, 2010; Engle, 2007; 2011; UNESCO, 2006 for reviews). It is assumed that ECCE can compensate for the less favourable home environments of socially disadvantaged families and close the gap in terms of school readiness and achievement between these children and their more advantaged peers. However, attendance is not enough; the quality of this experience matters and the potential for harm from low quality ECCE is a concern (UNICEF, 2008).

Large-scale methodologically rigorous longitudinal studies conducted in the U.S. (e.g. NICHD ECCRN, 2005) and in the United Kingdom (Sylva et al., 2006) have found a positive relationship between the quality of ECCE and children's cognitive, language and social outcomes. However, there is a dearth of studies on the relationship between pre-school quality and child development in the developing world. Using the benchmarks of the developed world, many programmes in the developing world would be considered of extremely poor quality, since many developing countries lack the resources to attain the quality standards used in the developed world. Myers (2006) reviewed longitudinal studies on the effects of ECCE programmes on children in the developing world and noted that few of them assess quality concurrently and longitudinally. On the basis of a critical review of 20 studies conducted in developing countries in Asia, Africa and Latin America which evaluated the effectiveness of early childhood programmes, Engle et al. (2007)

concluded that holistic, intensive, long-lasting, high quality early childhood interventions are effective in promoting child development and averting the loss of young children’s development potential.

Four studies conducted in South Asia have specifically evaluated pre-school quality and child outcomes. Research conducted in Bangladesh (Aboud 2006; Moore et al., 2008) and in India (MSSRF, 2000; Rao, 2010) found that even in programmes considered to be of low to mediocre quality using Western benchmarks, pre-school quality was positively associated with child developmental outcomes controlling for potential confounding variables (Rao and Sun, 2010, pp. 41-42).

Against this background, the studies described below examined the relationship between the quality of ECCE programmes and child outcomes in three low-resource level contexts in Asia. We were mindful of the need to use contextually appropriate tools to evaluate quality and to use as rigorous a methodology as possible. We assumed that in these contexts of high educational poverty, even the minimum input provided by programmes would have a positive impact on children – i.e. that something was better than nothing. At the same time, we hypothesized that children from higher quality programmes would have better cognitive, language and social developmental outcomes than other children.

### Asian context

Asia has 48 countries in eight sub-regional groups in UNESCO’s classification of the Asia-Pacific sub-region. This chapter covers three studies from different sub-regions (see Table 1).

**Table 1. Sub-regions in the Asia and Pacific region**

Sub-regions	Countries Studied
Mekong sub-region (5 countries)	Cambodia
Insular South-East Asia sub-region (5 countries)	
South Asia sub-region (7 countries)	India
West Asia sub-region (2 countries)	
Central Asia sub-region (5 countries)	
East Asia sub-region (3 countries)	China
Pacific sub-region (14 countries)	
Developed Countries (5 countries)	
Others (2 countries)	

Source: Authors.



The three countries use different terms for their ECCE services, and the services cover different age ranges (see the table below).

**Table 2. Terms used to denote early childhood services and age range covered**

Country	Terms and age ranges
Cambodia	ECCD (conception-6 years); primarily state, community, home-based, and private pre-schools (3-under 6 years)
China	ECCE (0-6); primarily three main types of nurseries (0-3), kindergartens (3-6), pre-primary classes (5-6). There are also a variety of other forms of ECCE services for children and parents.
India	ECCE (0-6 years), including an array of public, private and NGO-sponsored programmes, crèches for working mothers, and pre-primary sections in schools (3-6 years)

Source: Authors.

Participation in pre-school programmes has increased in Cambodia, China and India over the past decade (UNICEF, 2012). A fundamental concern of governments in these three countries (as is the case all over the world) is the promotion of equity. This has typically been pursued by providing all children with access to early childhood services and/or ensuring that all children, regardless of social background, have equal access to quality services. However in resource-constrained environments, such as Cambodia and India, government policy indicates that priority is given to the poorest and most vulnerable sectors of society. However, in all three countries there is inequity, with the more advantaged children having higher access rates to ECCE, which also tends to be of a higher quality than for other children (Rao and Pearson, 2007; Rao et al., 2012a, b; UNESCO, 2006).

### Cambodia

Cambodia has a population of about 14 million, with around 1.5 million children below 5 years (UNICEF, 2012). In 2007, when our study was conducted, it had an under-5 mortality of 91 and a high rate (37 per cent) of stunting (UNICEF, 2008). By 2010, the under-5 mortality rate had decreased to 58, but there still is a high rate of moderate to severe stunting (40 per cent in 2006-2010) in Cambodia (UNICEF, 2012). In 2005-2006, the enrolment rate in ECCE for 3-5 year olds in Cambodia was about 12 per cent overall (RGOC, 2006), and for 5- to 6-year-olds, it was 27.27 per cent (state pre-schools 21.23 per cent; private pre-schools 1.43 per cent; community pre-schools 3.96 per cent and home-based programmes 0.84 per cent). More recent figures indicate that in 2009-2010, the enrolment rate of 3- to 5-year-olds was 20 per cent and that it was 38 per cent for 5-year-olds (UNICEF, 2011). The

Cambodian government would like to give priority for ECCE to children from poor and remote backgrounds, but it does not have the funds to increase state pre-school provision or increase the national budget for ECCE.

Information presented in the following sections is drawn from Rao and Pearson (2007), Rao and Sun (2011), and Rao et al. (2012a). There are three main types of pre-school programmes in Cambodia: state pre-schools, community pre-schools and home-based programmes. State pre-school teachers have the highest academic and professional qualifications, having completed a 2-year full-time teacher-training course after Grade 12, and receive a government salary. Not surprisingly, state pre-schools cost more than other programmes. They operate a 3-hour programme, five days a week during the 38-week school year. Instruction is provided in a proper classroom with a roof, posters with curriculum-related materials are displayed on the walls and toilets and running water are available. Children have access to paper, pencils, books and toys.

In community pre-schools, educational experiences for 3 to 5-year-olds are provided by a member of the village who has typically received 10 days of initial training and who participates in refresher training courses for 3 to 6 days a year. The programme operates for two hours a day, 5 days a week, for 24 to 36 weeks a year. Community pre-school teachers receive a stipend each month for their work, and this is expected to be met by the village. Most classes are held under teachers' houses and there are health and safety issues when this is the case. Further, parents tend to send all their children, including those less than 3 years of age, to the community pre-school, making the job of the teachers very difficult.

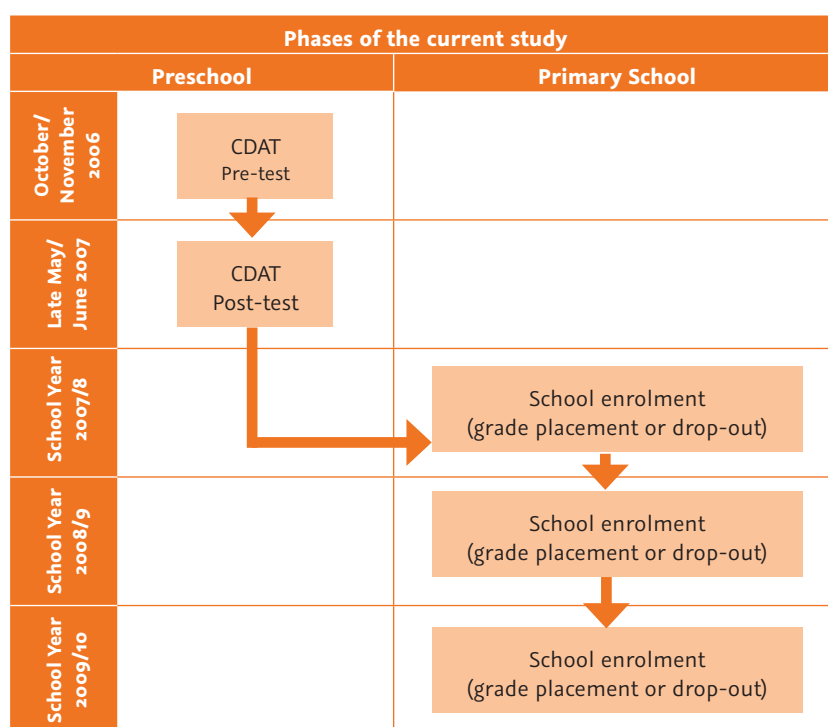
Home-based programmes are offered through mothers' groups formed in villages. Again, the government expects each village to provide funding and resources through the local commune council. The groups are facilitated by a 'core' mother in the village who has generally received a 2-day training course in the use of the programme materials. Typically, the groups meet early in the morning before women go to work in the fields. Home-based programme materials include advice on nutrition, general well-being and developmental stages.

Our study included a randomized sample of 880 5-year-olds (55 per cent girls) from six provinces in Cambodia who were attending one of the three key pre-school programmes described above or no programme at all. The Cambodian Developmental Assessment Test (CDAT), a culturally relevant measure, was used to evaluate developmental gains associated with each

of the three programmes. Children were assessed at the beginning and end of the school year. UNICEF further followed these children when they were in primary school for another 3 years (2007, 2008, and 2009) to track their school enrolment and progression through primary school (Zanolini, 2011).

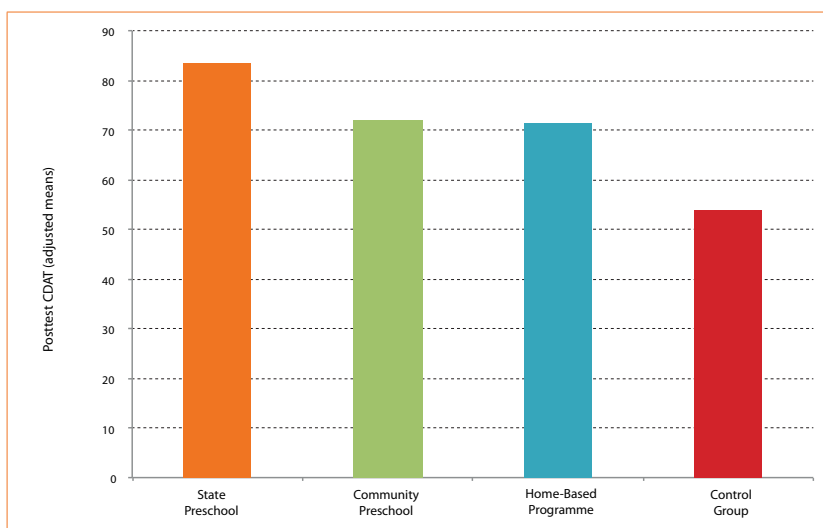
We hypothesized that children attending state pre-schools, which are funded by the Cambodian government and form part of the formal education system, would perform better than those attending community pre-schools and home-based programmes. We also, however, hypothesized that some kind of programme might be better than none; specifically, we suspected that the community pre-schools and home-based programmes, which cater for children who do not have access to state pre-schools, would result in improved outcomes, although having a smaller impact.

**Figure 1. Data collection plan in Cambodia**



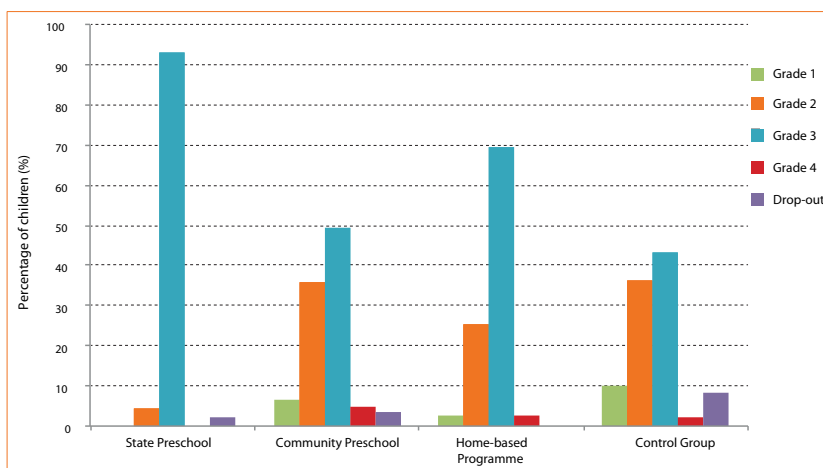
Source: Authors.

**Figure 2. Cambodian Developmental Assessment Test post test scores for children from different programmes (n = 880)**



Source: Rao, N., Sun, J., Pearson, V., Pearson, E., Liu, H., Conostas, M. A., & Engle, P. L. (2012). Is something better than nothing? An evaluation of early childhood programs in Cambodia. *Child Development*, 83, pp. 864-876.

**Figure 3. Pre-school participation and school enrolment in Grade 3 (2009-2010) (n = 956)**



Source: Rao, N. (2011, February). *Preschool participation and school enrollment in Cambodia: A longitudinal study*. Invited paper. Hong Kong: PECERA (Hong Kong) Annual Meeting.

Not surprisingly, children attending the relatively well resourced state pre-schools achieved significantly higher scores on the CDAT and were less likely to repeat grades than those attending community pre-schools and home-based programmes. There were no significant differences between the

community pre-schools and home-based programmes on gain scores on the CDAT. It is interesting to note that, while the degree of impact was influenced by the type of programme that children attended, all children who attended pre-school programmes had significantly better developmental outcomes, including school enrolment and grade promotion, than those who did not (See Figure 3). It appears that some type of pre-school experience is better than none.

## China

The following section is based on Rao and Sun (2010) and Rao et al. (2012b). China has a population of 1.3 billion, with 81 million children under 5 (UNICEF, 2012). In 2006, the GER for pre-primary education (4- to 6- year-olds) was 39 (UNESCO, 2008) and in 2008, it was 44 (UNESCO, 2011). In 2007, if one includes 3-year-olds, the GERs for children ranging in age from 3 to 6 years were 55.6 and 35.6 for urban and rural areas respectively (National Bureau of Statistics of China, 2008). On the basis of these figures, we can conclude that while 17 million 3- to 6-year-olds from rural areas attend ECCE, about 32 million do not (Government of China, 2007). As in other countries, poverty is a barrier to children's participation in ECCE. The majority of China's population live in rural areas (57 per cent), where there are higher levels of educational poverty and children would particularly benefit from ECCE. Further, China's remarkable economic growth in the past decades has increased inequities, particularly with respect to the urban-rural gap.

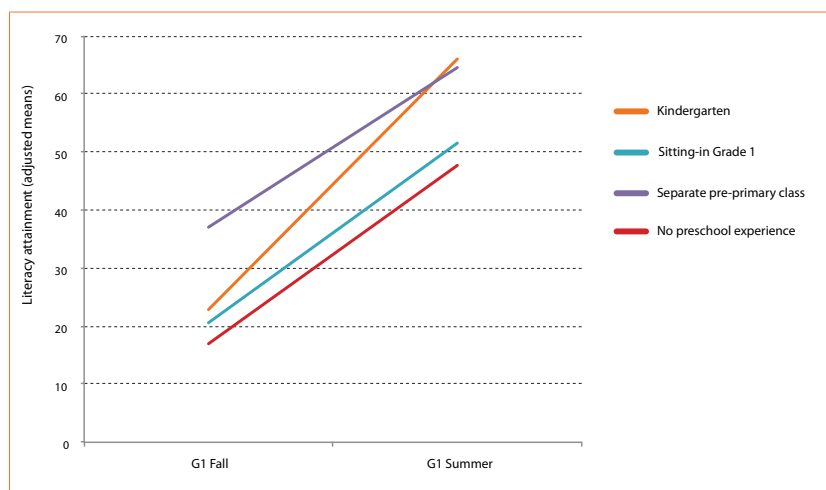
According to state-issued documents, there are three main types of early childhood centres in China: nurseries, which provide care for children from birth to 3 years of age; kindergartens, which provide care and education to children between 3 and 6, or 7 years of age; and pre-primary classes, which cater to the needs of children from 5 to 6 or 7 years of age, and which are typically attached to rural primary schools. However, for children aged 5 and above, we found another type of provision in rural Guizhou, where we conducted our study. Some rural primary schools allowed children below 7 years of age to sit-in on Grade 1 classes so that they had some exposure to formal learning environments before starting Grade 1. These children received the same instruction from the Grade 1 teacher and followed the same schedule as children officially enrolled in Grade 1.

Kindergartens are typically managed by educational authorities or communities and provide formal ECCE. They usually have child-appropriate furnishings, toys, and educational materials and adopt play-based methods

in daily teaching. Kindergarten teachers normally have basic training in ECCE. Kindergartens are not common in remote rural areas. Pre-primary classes, which are found in many rural primary schools, help 5- to 6-year-olds to adapt to a formal school environment before enrolment in Grade 1. In these classes, elements of the Grade 1 syllabus form part of the curriculum, and few toys are provided. Teachers in these classes do not typically have formal teaching qualifications for pre-school children. Because of their accessibility and focus on enhancing rural children's school-preparedness, separate pre-primary classes are an important form of ECCE in rural China.

In our study, we randomly selected 207 children who had different pre-school experiences (kindergarten, separate pre-primary class, sitting-in on a Grade 1 class, and no pre-school experience), and we observed teaching activities in the three different types of early childhood programmes. Children's school readiness was assessed at the beginning of Grade 1, and their literacy and mathematics attainment was assessed in the autumn semester and 10 months later (at the end of the school year). Our analyses were based on 170 children who completed the assessments at the end of Grade 1 and showed that children from kindergartens and separate pre-primary classes showed significantly higher school readiness than other children. Furthermore, children from the kindergarten programmes showed higher mathematics and literacy achievement at the end of Grade 1 than children who merely sat in on Grade 1 classes, or had no pre-school experience. Figure 4 shows the differences in literacy achievement across groups. Although children from kindergartens showed lower literacy scores at the beginning of Grade 1 than those in the separate primary class in the autumn, no differences were evident at the end of Grade 1. This may be due to the child-centred kindergarten curriculum compared to the more didactic practices in separate primary schools. Furthermore, the cumulative advantages offered by kindergarten programmes may be evident at a later point in development (sleeper effect). Observations of the classroom teaching episodes further indicated that kindergarten classes provided a relatively better learning environment, including more stimulating learning materials, more age-appropriate activities, and had more qualified teachers for children than the other two types of pre-school programmes, and that the separate pre-primary classes were also more appropriate for pre-school children than the Grade 1 classes where whole group instructions are normal teaching activities and the pre-school children are typically neglected by teachers. We found that sitting in on Grade 1 was better than not receiving any form of ECCE programme for mathematics attainment, although these children do not receive adequate attention from the teachers and this approach to ECCE is at odds with state-issued curriculum guidelines.

**Figure 4. Literacy attainment in the G1 autumn and summer assessments for children with different pre-school experiences**



Source: Rao, N., Sun, J., Zhou, J., & Zhang, Li. (2012). Early achievement in rural China: The role of preschool experience. *Early Childhood Research Quarterly*, 27, pp. 66-76.

Our results suggest that the higher quality kindergarten programmes should be expanded in rural areas, but we understand that this requires considerable resources which may not be easy to mobilise. Hence, it may be more realistic and incur less expenditure to encourage the establishment of more separate pre-primary classes in primary schools in rural areas. However, in such cases, schools would need technical and professional support to do so.

## India

India has a population of 1.1 billion including around 128 million children under 5 (UNICEF, 2012). India has a high under-5 mortality rate (63 in 2010), and high rates of moderate to severe stunting (48 in 2006-2010). The Integrated Child Development Services (ICDS) scheme has been the Indian government's major early childhood intervention strategy. The ICDS is a Head Start-type intervention designed to promote the early development of Indian children from economically disadvantaged families. Under this nationwide programme, children up to the age of 6 benefit from a package of services that includes medical checks, immunizations, referral services, supplementary feeding, pre-school education, and health and nutrition education. The programme was initiated in 1975 and in 1995, the government made a commitment to universalize the ICDS for all eligible beneficiaries. This has led to a marked expansion of the programme, which now serves

over 77 million children under the age of 6 (Ministry of Women and Child Development, Government of India, 2013).

Rao (2010) examined the influence of pre-school quality on the development of sixty-seven 4-year-old children from poor and rural families in Andhra Pradesh, India who were attending two different ICDS centres. Since government-funded inputs were the same for both centres, one would expect no differences in structural quality between them. Children's development was assessed using a modified version of the McCarthy Scales of Children's Abilities and through physician ratings. Pre-school quality was assessed through repeated systematic observations and by the Tamil Nadu Early Childhood Environment Rating Scale (Isley, 2001). Results indicated that one centre received a higher score on the ECERS (Centre I: 78) than the other (Centre Y: 51). These two centres did not differ in structural variables (infrastructure, personal care routines and physical learning aids), but there were differences in sub-scales related to process quality. Higher pre-school quality was associated with better overall development, while pre-school quality accounted for 31 per cent of the variance. It should be noted that even Centre I would be considered to be of poor quality by Euro-American standards. Nonetheless, findings from this study underscore the fact that even such programmes do have benefits for the development of children from disadvantaged families in India.

As the higher quality centre was closer to the Project Office, we believe that the Anganwadi worker's (early childhood educator) exposure to informal interactions with the Child Development Programme Officer positively influenced her interactions with the children and her professional development. Results from this study suggest that more attention should be given to process quality, and more professional support should be provided to early childhood educators.

As elsewhere, the scaling-up of government services brings concern over a decrease in their quality. Another concern is the quality of provision in the for-profit sector. While the government has been focusing its efforts on meeting the needs of the most vulnerable section of society, it has not paid attention to the quality of private centres, which have rapidly proliferated and are also attended by children from economically disadvantaged families. There are no government regulations for registering and operating pre-schools, no curriculum guidelines and no requirements for staff to have professional qualifications. An estimated 10 million children receive early childhood services from privately owned and operated programmes. While a few prestigious private schools offer very high quality programmes, it has



been estimated that 95 per cent of the pre-schools in the private sector use age-inappropriate methods (Rao and Sun, 2010).

## Conclusions and recommendations

There are some methodological limitations in the three studies discussed in this chapter, including the small sample sizes, lack of randomized sampling, and shortcomings in the statistical approaches adopted. Nevertheless, they contribute to the limited literature on pre-school effectiveness in the developing world. What do these studies tell us about the relationships among ECCE attendance, ECCE quality and child outcomes in low-resource environments?

- In Cambodia and China, children who attended any form of pre-school had better school readiness than children who had no ECCE.
- In Cambodia, China and India, children from higher quality programmes had better school readiness than children from lower quality programmes.
- Children who attended high quality ECCE programmes had higher literacy and mathematics attainment in Grade 1 than children in less age-appropriate programmes in China.
- In Cambodia, children from the high quality programmes were less likely to repeat grades or drop-out of school than other children.

The quality of the programmes we observed in Cambodia, China and India would be deemed rather low by Euro-American standards (The state pre-schools in Cambodia and kindergartens in China had large class sizes by these standards). However, in these poor and rural contexts, where maternal education is low and there are fewer resources for learning in the family and community, these programmes make a difference to children's school readiness.

The findings from these studies improve our understanding of the relationship between pre-school quality and child development, contribute to further programme development and provide empirical data for evidence-based ECCE practices and policy in Asia and beyond. Further, we hope that data on differences in child development as a function of programme type, parental education, urban/rural residence, and family wealth will lead to targeted

programmes for the vulnerable as a first step toward universal access to high quality programmes.

While other stakeholders also have responsibility, the onus is on governments to drive equity (access + quality) in the early childhood sector. There is a need for governments to (i) move beyond only increasing access and to focus on the quality of provision; (ii) implement systems of quality assurance which take into consideration the range of programmes available, the ages of children served and contextual variables; and (iii) evaluate their strategies to promote equity. With few exceptions, governments in Asia have typically focused on input indicators and neglected process and output indicators in the evaluation of their strategies to promote equity. The promotion of high quality education for all children is clearly the strategy to achieve equity and 'Build the Wealth of Nations' (UNESCO, 2010b).

---

## References

- Aboud, F. E. 2006. Evaluation of an early childhood pre-school programme in rural Bangladesh. *Early Childhood Research Quarterly*, Vol. 21, No. 1, pp. 46-60.
- Association for Childhood Education International (ACEI). 2006. *ACEI Global Guidelines Assessment*. <http://www.acei.org/wguideshp.htm> (Accessed 25 March 2015.)
- Barnett, W. S. 1998. Long-term cognitive and academic effects of early childhood education on children in poverty. *Preventive Medicine*, Vol. 27, pp. 204-207.
- Britto, P. R., Yoshikawa, H., and Boller, K. 2011. Quality of early childhood development programmes in global contexts: Rationale for investment, conceptual framework and implications for equity. *Society for Research in Child Development Social Policy Reports*, Vol. 25, No. 2, pp. 1-30.
- Burger, K. 2010. How does early childhood care and education affect cognitive development? An international review of the effects of early interventions for children from different social backgrounds. *Early Childhood Research Quarterly*, Vol. 25, pp. 140-165.
- Copple, C. and Bredekamp, S. 2009. *Developmentally Appropriate Practice in Early Childhood Programs: Serving Children from Birth through Age 8*. Washington, DC, National Association for the Education of Young Children.
- Cost, Quality, and Child Outcomes Study Team. 1995. *Cost, Quality and Child Outcomes in Child Care Centers: Executive Summary*. Denver, University of Colorado.
- Engle, P. L., Black, M. M., Behrman, J. R., et al. and the International Child Development Steering Group. 2007. Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world. *The Lancet*, Vol. 369, pp. 229-242.

- Engle, P. L., Fernald, L. C. H., Alderman, H., et al. and the Global Child Development Steering Group. 2011. Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *The Lancet*, Vol. 378, pp. 1339-1353.
- Government of China. 2007. *Statistical Communiqué of the People's Republic of China on the 2007 National Education Development*. <http://www.stats.edu.cn> (Accessed 25 March 2015.)
- Harms, T., Clifford, R. M., and Cryer, D. 1998. *Early Childhood Environment Rating Scale-Revised Edition*. New York, Teachers College Press.
- Heckman, J. J. 2004. *Invest in the Very Young. Encyclopedia on Early Childhood Development*. <http://www.child-encyclopedia.com/documents/HeckmanANGxp.pdf> (Accessed 25 March 2015.)
- Isley, B. J. 2000. *Tamil Nadu Early Childhood Environment Rating Scale (TECERS)*. Chennai, India, M.S. Swaminathan Research Foundation.
- Lamb, M. E. 1998. Non-parental child care: Context, quality, correlates and consequences. In Damon, W. (Series ed.) and Sigel, I. E. and Renninger, A. (Vol. eds) *Handbook of Child Psychology: Vol. 4. Child Psychology in Practice*. New York, Wiley, pp. 73-133.
- Lynch, R. G. 2004. *Exceptional Returns: Economic, Fiscal and Social Benefits of Investment in Early Childhood Development*. Washington, DC, Economic Policy Institute.
- Ministry of Women and Child Development, Government of India, 2013. *Status of the ICDS Scheme as on 31-03-2013*. <http://wcd.nic.in/icds/icdsdatatables.aspx> (Accessed 25 March 2015.)
- Moore, A.C., Akhter, S., and Aboud, F. E. 2008. Evaluating an improved quality pre-school programme in rural Bangladesh. *International Journal of Educational Development*, Vol. 28, pp. 118-131.
- M. S. Swaminathan Research Foundation (MSSRF), 2000. *Quality Matters: Understanding the Relationship between Early Childhood Education and Learning Competencies of Children*. Chennai, India, MSSRF.
- Myers, R. G. 2006. Quality in program of early childhood care and education (ECCE). Background paper for *EFA Global Monitoring Report 2007*.
- NICHD Early Child Care Research Network (ECCRN). 2005. *Child Care and Child Development: Results from the NICHD Study of Early Child Care and Youth Development*. New York, Guildford Press.
- Pena, E. D. 2007. Lost in translation: Methodological considerations in cross-cultural research. *Child Development*, Vol. 78, No. 4, pp. 1255-1264.
- Phillips, D., and Howes, C. 1987. Indicators of quality in child care: Review of research. In D. Phillips (ed.) *Quality in Child Care: What Does Research Tell Us?* Washington, DC, National Association for the Education of Young Children, pp. 1-20.
- Rao, N. 2010. Educational policy, kindergarten curriculum guidelines and the quality of teaching and learning: Lessons from kindergartens in Hong Kong. *International Journal of Early Childhood Education*, Vol. 16, No. 2, pp. 27-39.
- Rao, N. and Pearson, E. 2007. *Evaluation of Community Pre-school and Home-based Early Childhood Programmes in Cambodia*. UNICEF, Cambodia.

- Rao, N. and Sun, J. 2010. *Early Childhood Care and Education Regional Report: Asia and the Pacific*. UNESCO World Conference of Early Childhood Care and Education. <http://unesdoc.unesco.org/images/0018/001892/189210E.pdf>. also published as Rao, N. and Sun, J. 2010. *Early Childhood Care and Education in the Asia-Pacific Region: Moving towards Goal 1*. Hong Kong, Comparative Education Research Centre, The University of Hong Kong.
- Rao, N. and Sun, J. 2011. Scaling-up early childhood programs: Moving towards evidence-based decision making in Asia. *Bulletin of the International Society of Behavioural Development, Special Section on Intersections between Research and Social Policy*. Vol. 60, No. 2, pp. 23-27. [http://www.issbd.org/resources/files/JBD\\_Nov11.pdf](http://www.issbd.org/resources/files/JBD_Nov11.pdf) (Accessed 25 March 2015.)
- Rao, N., Sun, J., Pearson, V., Pearson, E., Liu, H., Conostas, M. A. & Engle, P. L. 2012a. Is something better than nothing? An evaluation of early childhood programs in Cambodia. *Child Development*, Vol. 83, pp. 864-876.
- Rao, N., Sun, J., Zhou, J. and Zhang, L. 2012b. Early achievement in rural China: The role of pre-school experience. *Early Childhood Research Quarterly*, Vol. 27, pp. 66-76.
- Royal Government of Cambodia (RGOC). 2006. *Early Childhood Care and Education Enrollments*. Ministry of Education, Youth and Sports (MoEYS) Management Information System. Cambodia: Royal Government of Cambodia.
- Shonkoff, J. P., and Phillips, D. A. 2000. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington, DC, National Academy Press.
- Slyva, K., Siraj-Blatchford, I., Taggart, B., Sammons, P., Melhuish, E., Elliot, K. 2006. Capturing quality in early childhood through environmental rating scales. *Early Childhood Research Quarterly*, 21, pp. 76-92.
- Tobin, J. 2005. Quality in early childhood education: An anthropologist's perspective. *Early Education and Development*, Vol. 16, pp. 422-434.
- UNESCO. 2006. *EFA Global Monitoring Report 2007: Strong Foundations - Early Childhood Care and Education*. Paris, UNESCO.
- UNESCO 2007. Good governance of early childhood care and education: Lessons from the 2007 EFA global monitoring report. *UNESCO Policy Briefs on Early Childhood*, No. 40. Paris, UNESCO.
- UNESCO. 2008. *EFA Global Monitoring Report 2009: Overcoming Inequality - Why Governance Matters*. Paris, UNESCO.
- UNESCO. 2010a. *EFA Global Monitoring Report 2010: Reaching the Marginalized*. Paris, UNESCO.
- UNESCO. 2010b. *World Conference on Early Childhood Care and Education (ECCE). Building the Wealth of Nations*. Retrieved from <http://www.unesco.org/new/en/world-conference-on-ecce/goals-and-objectives> (Accessed 25 March 2015.)
- UNESCO. 2011. *EFA Global Monitoring Report 2001: The Hidden Crisis - Armed Conflict and Education*. Paris, UNESCO.
- UNICEF. 2008. *State of the World's Children 2009: Maternal and New Born Health*. New York, UNICEF.
- UNICEF. 2011. *Evaluation of UNICEF's Early Childhood Development Programme with Focus of Government of Netherlands Funding (2008-2010): Cambodia Case Study Report*. New York, UNICEF.

UNICEF. 2012. *The State of the World's Children 2012: Children in an Urban World*. New York, UNICEF.

Zanolini, A. 2011. *ECE Longitudinal Study Evaluation*. Study done for UNICEF Cambodia. Personal communication.

Zaslow, M., Tout, K. and Halle, T. 2011. Differing purposes for measuring quality in early childhood settings: Aligning purpose with procedures. In Zaslow, M., Martinez-Beck, I., Tout, K. and Halle, T. (eds). *Quality Measurement in Early Childhood Settings*. Baltimore, MD: Brookes Publishing Company, pp. 389-410.