



Predictors of Chinese early childhood program quality: Implications for policies



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ABSTRACT

This study explores the relationship between structural variables and program quality in early childhood programs across economic, sociocultural, and policy contexts in Zhejiang, China. Using the *Chinese Early Childhood Environment Rating Scale* (CECERS), researchers collected data in 162 randomly selected classrooms representative of the sociocultural and economic conditions of Chinese early childhood programs. The findings showed that a set of program structural variables accounted for 60% of the variance in overall program quality. Similar findings were shown for two specific program quality indicators: structural quality ('Provisions for Learning') and process quality ('Teaching & Interaction'). Results suggest that policy makers in early childhood education in China should offer more benefits and training for teachers, recognize teachers' professional qualifications, and maintain lower child-to-teacher ratio to improve Chinese ECE programs.

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1. Introduction

Research has increasingly shown the positive effect of high-quality early childhood education (ECE) on child outcomes (Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Gormley, Gayer, Phillips, & Dawson, 2005; Howes et al., 2008; Mashburn et al., 2008; NICHD Early Child Care Research Network, 2005). These findings have prompted policy makers and other stakeholders in China to place greater emphasis on providing quality services to young children (Hu & Li, 2012; Rao, Sun, Zhou, & Zhang, 2012). Currently, however, a majority of the nation's budget is allocated to primary (31.65%) and secondary education (30.52%), with ECE receiving a meager 1.67% (Wu, Young, & Cai, 2012). Although the funding for ECE has gradually increased over the past several years (to 3.24%), (Ministry of Education (MOE) of the People's Republic of China, 2014), these limited funds have gone to more affluent urban areas where almost 90% of young children attend a three-year kindergarten, leaving the majority of children in rural regions (approximately one third), who are typically from socially-disadvantaged backgrounds, with limited access to public ECE (Hu, Roberts, Jeong, & Guo, 2015; Wu et al., 2012).

There is a growing awareness that children with fewer economic resources and those living in rural areas also should have access high-quality ECE services (Hu & Li, 2012; Rao et al., 2012). Recently, the Chinese government has initiated policies to support the development of

public ECE programs in rural areas and to expand the number of children who receive services within high-quality learning environments (The Central People's Government of the People's Republic of China, 2010). To support the development, monitoring, and regulation of appropriate policies and to ensure quality ECE throughout China, we must better understand how specific structural quality factors (e.g., classroom-level, school-level) are related to process quality within early childhood programs (Hu & Li, 2012).

1.1. Understanding early childhood program quality

ECE quality is a multi-faceted concept that can be operationalized into two major types: *process quality* (e.g., adult-child interactions, staff behaviors, beliefs about caring) and *structural quality* (e.g., policies, child-teacher ratios, staff education levels, furnishings) (Love, Schochet, & Meckstroth, 1996; Moss & Dahlberg, 2008; Moss & Pence, 1994; Tobin, 2005). Process quality directly shapes the learning experiences of children through adult-child interactions, peer interactions, and manipulation of learning materials. Structural quality, on the other hand, refers to various center, classroom, and teacher characteristics—a host of aspects of the ECE learning environment and workforce conditions that are often regulated by policies (Bryant, Zaslow, & Burchinal, 2010).

In general, researchers have proposed that there is a direct relationship between structural quality factors, process quality, and child outcomes. That is, structural quality predicts process quality which leads to better child outcomes (Burchinal et al., 2000; Burchinal, Cryer, Clifford & Howes, 2002). For example, factors such as teaching experience, more specialized training, a Bachelor's degree, and a major in

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ECE are more likely to be related to higher process quality in ECE programs (Burchinal, Cryer, et al., 2002; Burchinal, Howes, & Kontos, 2002; Early et al., 2007; Ghazvini & Mullis, 2002). In addition, higher levels of emotional and instructional support are more likely to be found in classrooms led by teachers with more years of experiences and by those who received a 4-year college degree (LoCasale-Crouch et al., 2007; Pianta et al., 2005).

Most studies have reported a statistically significant relationship between process quality and the following teacher-related variables (including teachers' level of education and certification, years of teaching, teacher-child ratio) and school-related variables (including tuition fee) (Pianta et al., 2005). For example, the findings from two studies in particular found that higher quality classrooms were actually taught by teachers with more years of experience (Early et al., 2006; LoCasale-Crouch et al., 2007). Slot, Leseman, Mulder, and Verhagen (2015) reported that Dutch preschool teachers' formal education was positively correlated to process quality, although the effect size was small. Moreover, studies have shown that lower child/caregiver ratio is one of the best predictors of higher program quality, more sensitive teacher-child interactions and better child outcomes (Ghazvini & Mullis, 2002; LoCasale-Crouch et al., 2007; Pessanha, Aguiar, & Bairrao, 2007; Pianta et al., 2005). However, not every study found a consistent relationship between these variables (Pianta et al., 2005). Slot et al. (2015) reported that neither group size nor teacher-child ratio were related to process quality in the Dutch preschool classrooms.

Wage, tuition, program type, program operating hours, and location also have been found to be predictive of process quality (LoCasale-Crouch et al., 2007; Pessanha et al., 2007; Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000; Phillipsen, Burchinal, Howes, & Cryer, 1997; Pianta et al., 2005). In several studies, wage is the strongest predictor of program quality; however, others have revealed somewhat lower program quality when teachers earned higher wages (Helburn, 1995; Howes, Phillips, & Whitebook, 1992; Phillips et al., 2000; Scarr, Eisenberg, & Deater-Deckard, 1994). Additionally, some studies demonstrated that children in full-day programs had more positive outcomes than those who only attended half-day programs (Fusaro, 1997; Housden & Kam, 1992; Karweit, 1987, 1989; Puleo, 1988; Rothenberg, 1995). Finally, location seems to be related to process quality in terms of pre-k programs' patterns and success in engaging families (Pianta et al., 2005). Parents reported that pre-kindergarten programs located in community settings had more flexibility for interacting with families (Rimm-Kaufman & Pianta, 2005). These research findings suggest that there is a direct relationship between structural and process quality; however, some variables are more predictive than others.

Researchers do not yet have a clear understanding of this association within China, which is essential given the emphasis on expanding ECE. Research focused on the correlation between structural quality and process quality is scarce in China (Hu, Zhou, Li, & Roberts, 2014; Pan, Liu, & Hu, 2008; Rao, Koong, Kwong, & Wong, 2003). In the studies that have been conducted, certain structural variables (e.g., degree, number of children) have been found to be predictive of global quality in Chinese ECE programs (Pan et al., 2008; Rao et al., 2003). Chinese scholars have systematically adapted the *Early Childhood Environment Rating Scale-Revised* (ECERS-R; Harms, Clifford, & Cryer, 2005) to measure ECE program quality in Chinese settings. The new adapted scale, called *The Chinese Early Childhood Environment Rating Scale* (CECERS; Li, Hu, Pan, Qin, & Fan, 2014), has two clear factors with one focused on structural aspects of quality ('Provisions for Learning') and the other one focused on process quality ('Teaching & Interaction'), which is consistent with other studies examining the validity and factor structure of the ECERS-R (Sakai, Whitebook, Wishard, & Howes, 2003; Perlman, Zellman, & Le, 2004). Furthermore, recent empirical findings provide solid support for the use and interpretation of CECERS scores as quality indicators of Chinese ECE programs (Li et al., 2014) as well as predictors for Chinese children's cognitive and language development (Li et al.,

2016). The focus of this article is on the variables that might predict structural quality ('Provisions for Learning') and process quality ('Teaching & Interaction') within Chinese kindergartens. This exploration is particularly timely as researchers and policy makers are in critical need of more empirical evidence to guide Chinese policies regulating adult-child ratio, classroom size, and teacher qualifications that will promote process quality within programs. Research conducted across program types would be beneficial for policy makers wanting to define, assess, and regulate program quality, particularly since no national-level accredited programs currently exist in China.

1.2. Early childhood education in China

In China, kindergarten is the most prevalent type of ECE program for educational enrichment. Chinese kindergarten differs from kindergarten classes in the United States in two ways. First, Chinese kindergartens are not included in the public education system which only serve children from grades 1 to 9. Second, kindergartens serve children ages three to six in three grade levels: K1 (3 to 4 years old), K2 (4 to 5 years old), and K3 (5 to 6 years old). Chinese kindergartens are typically full day programs and often have large class sizes. In some rural and remote areas, a kindergarten class size could be over 50 or 60 students each; however, it is recommended that a typical kindergarten class size should be 20–25 for children 3 to 4 years old, 25–30 for children 4 to 5 years old, and 30–35 for children 5 to 6 years of age (Ministry of Education of the People's Republic of China; MOE, 2001; Rao et al., 2012). According to the MOE of the People's Republic of China (2014), the gross enrollment rate of children age three to five is about 70.5%, which is close to the national goal of universalizing ECE as stated in the China's National Plan for Medium and Long-term Education Reform and Development (2010–2020) (hereinafter referred to as 'the Plan').

According to the MOE's latest report (2014), the majority of the three-year kindergarten programs are funded by private sectors (66.36%). Public kindergarten programs might be funded by a variety of public sectors, including state, city, or country level educational department, public service agencies including health departments of state hospitals, and other public institutions such as universities (Hu & Li, 2012). It is noteworthy that among all public kindergartens, the majority of them, but not all of them, receive full funding from the government (i.e., the government pays for every aspect of the operating cost of the kindergartens). Public kindergartens affiliated with educational departments are typically fully funded by the government. In general, public kindergartens are of higher quality than private kindergartens, and among public kindergarten programs of different funding entities, those run by state or city level ministry of education tend to be of higher quality mainly because of their superior policies (e.g., all or majority of the teachers are recruited with *bianzhi* positions, more opportunities for professional development and/or continuing education) to attract and retain high-quality teachers (Hu & Li, 2012). Public programs are more likely to be concentrated in more affluent urban areas because these programs mostly serve children from higher income families, and they normally have a higher level of quality due to the location and the resources available (Hu & Li, 2012). However, private programs have widely varying tuition fees, and those that charge the highest tuition rates are designed for children from the families with the most economic resources. Unfortunately, previous studies repeatedly found that private kindergartens providing services for children from socio-economically disadvantaged families (particularly in rural areas) tend to be of unacceptably low quality (Hu et al., 2014; Pan et al., 2008; Wu et al., 2012).

One big commitment of the Chinese government is to improve the quality of kindergarten programs that serve children from low SES backgrounds through two main avenues: expanding publically funded kindergartens and increasing subsidies for private kindergartens that are of reasonable quality to strengthen their capacities to serve families in

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