

Title Registration for a Systematic Review: Teacher Qualifications and Their Impact on the Quality of the Early Childhood Learning Environment: A Systematic Review Matthew Manning, Susanne Garvis, Christopher Fleming, Gabriel T. W. Wong

Submitted to the Coordinating Group of:

	Crime and Justice
\boxtimes	Education
	Disability
	International Development
	Nutrition
	Social Welfare
	Other:

Plans to co-register:

\square	No		
	Yes	Cochrane	Other
	Maybe		

Date Submitted: 5 December 2013 Date Revision Submitted: 15 January 2014 Approval Date: 28 January 2014 Publication Date: 03 March 2014

TITLE OF THE REVIEW

Teacher Qualifications and Their Impact on the Quality of the Early Childhood Learning Environment: A Systematic Review

BACKGROUND

According to Helburn and colleagues (1995), high-quality early childhood education (ECE) can be defined as "...that which is most likely to support children's positive development" (p. 1). The quality of ECE and child care has been recognised as a pivotal determinant for the establishment of key cognitive, physical, and social-emotional skills (National Institute of Child Health and Human Development (NICHD) Early Child Care Research Network, 2005; Peisner-Feinberg et al., 1999). It is suggested that positive developmental and social experiences, as well as a supportive and nurturing environment, in the early years of life (e.g., preschool years) translate into improved school readiness, which is the key to a positive, successful and enriching educational experience (Manning, Homel, & Smith, 2010). This concept is supported by the developmental prevention literature, which highlights that developmental and social experiences vary between groups (e.g., those living in high or low socioeconomic-status areas) and that these differences in experience may be affected by the environment in which the child grows and learns (Blokland & Nieuwbeerta, 2010; Homel, 2005). As such, the institutions of early childhood education play a pivotal role in the overall social, emotional, and educational development of the child (Sylva et al., 2006; Warash, Ward, & Rotilie, 2008).

The term "quality" in reference to early childhood education (ECE) can include multiple distal (e.g., broad parameters of program and state policies) and proximal (e.g., curriculum and caregiver-child interactions) features of an early childhood learning environment that are expected to support children's development in various domains (e.g., cognitive, language, and social development) (Dunn, 1993; Kontos, 1991). The relative importance of indicators of either proximal or distal features varies across a multitude of perspectives, including that of the parent, caregiver, and child (Layzer & Goodson, 2006). In order to avoid vague and nonspecific definitions of quality, early childhood researchers have commonly conceptualized and disaggregated ECE quality into two interrelated components: (1) structural quality, which refers to indicators such as staff-child ratios; and (2) process quality, which includes learning opportunities available to the children, and teacher-child and peerto-peer interactions within the child care environment (Clifford, Reszka, & Rossbach, 2010). Previous literature reveals that both structural and process characteristics of quality are related to developmental outcomes (Sammons et al., 2002), and process quality has been found to be a more effective predictor (Whitebook, 1989). In this regard, it has been the priority of policy makers and education experts to enhance quality in the early education sector, especially process quality.

Process quality is assessed primarily through observing the learning environment (Clifford et al., 2010). Regarding the measurement of process quality, some measures focus on specific aspects of the teacher-child interaction (e.g., the Caregiver Interaction Scale (CIS); Arnett, 1989), and the Student Teacher Relationship Scale (STRS) (Pianta & Nimetz, 1991)). However, the entire notion of the learning environment is beyond these specific aspects as measured by CIS or STRS and is defined in a broader sense with interactions between program components and among people in the preschool setting (Harms & Clifford, 1983). Hence, global measures, including the Early Childhood Environment Rating Scale (ECERS; Harms & Clifford, 1980), the Infant Toddler Environment Rating Scale (ITERS; Harms, Cryer, & Clifford, 2003) and their revised versions-ECERS-R (Harms, Clifford, & Cryer, 1998) and ITERS-R (Harms et al., 2003)—which focus on multiple processes within the early childhood learning setting, are recognised as a set of standardised measurement tools and are widely used in research assessing childcare quality (Clifford et al., 2010). Since its development, the ECERS-R has been the primary option for researchers and professionals in the field (Tout, Zaslow, Halle, & Forrey, 2009). Although there are other measurement tools, such as the Observational Rating of the Care Environment (ORCE) Qualitative Ratings (NICHD Early Child Care Research Network, 1999), which also assess the early childhood learning environment, these models are relatively less well-applied, and some of them may be underdeveloped: for example, the Supports for Early Literacy Assessment (SELA) (Committee on Developmental Outcomes and Assessments for Young Children, 2008).

Both the breadth of multifaceted information measured by the ECERS-R and the general lack of supplemental measurement tools contribute to the predominant use of ECERS-R as the primary scale assessing quality in ECE settings (Tout et al., 2009). As a pioneering self-assessment tool in ECE, the ECERS-R has been used in recent large studies of classroom quality such as the National Centre for Early Development and Learning's (NCEDL) Multi-State Study of Pre-Kindergarten and Study of State-Wide Early Education Programs (SWEEP) (La Paro, Thomason, Lower, Kintner-Duffy, & Cassidy, 2012). Further, ECERS-R has gained additional influence on practice and policy-related decisions in the field, as it has become the measure of quality in the state-wide Tiered Quality Rating and Improvement Systems (TQRISs) in the United States (Tout et al., 2009).

In the last four decades, some large-scale studies of child care quality were conducted (Sakai, Whitebook, Wishard, & Howes, 2003), and researchers attempted to demonstrate relationships between program quality (as measured by the ECERS/ECERS-R) and variables such as staff stability and staff background characteristics (Huntsman, 2008; Sakai et al., 2003). Among the vast array of variables that claim to have an impact on the early learning environment, staff qualification has been identified as one of the strongest predictors of high ECERS/ITERS ratings (with score of 5 or higher in the 7-point scale) (Phillipsen, Burchinal, Howes, & Cryer, 1997; Whitebook, 2003b; Whitebook, Sakai, Gerber, & Howes, 2001). Through distinguishing bachelor's degrees and specialised childhood training from other levels of education and training, previous literature suggests that bachelor's degrees with specialised training in ECE secure high quality child care and education (Whitebook, 2003a). Growing concern about the relationship between quality in ECE and teacher qualification has prompted policy makers and early childhood education and care providers to consider requiring ECE centres to increase the proportion of qualified registered teachers (Dowling & Malley, 2009; Elliott, 2006; Mitchell, 2010). However, there is a concern that increasing the qualifications of staff within ECE centres will be prohibitively expensive (Elliott, 2006). In order to inform the educational policy debate on the merits of increasing the qualifications of staff within ECE centres, a systematic review of best available research findings on this topic is warranted. Findings of previous reviews do not allow estimation of precise improvement of process quality in the early childhood environment. For example, what improvements in ECERS or ECERS-R are obtained from incremental increases in staff qualifications (Whitebook, 2003b)? Findings of some studies (e.g., Phillips, Mekos, Scarr, McCartney, & Abbott–Shim, 2000; Sakai et al., 2003) suggest that there is no significant relationship between ECERS scores and the percentage of teaching staff with a bachelor's or advanced training in ECE in a centre. Focusing on the school-related learning and social skills over the pre-Kindergarten year, findings of Howes and colleagues' (2008) study argue that there is a mixed relationship between teacher qualifications and classroom quality (as measured by ECERS-R).

The inconclusive evidence, therefore, suggests a need for further investigation. In the absence of a systematic assessment of the available evidence, it is difficult, if not impossible, for policymakers and education experts to make sound evidence-based decisions. The absence of a thorough examination on this topic may hinder evidence-based policy making and create uncertainty with respect to the suggestion of raising the education standards for teachers in early childhood institutions. The potential outcomes of the proposed review are that: (1) the relationship between teacher qualifications and the process quality of ECE will be clarified; and (2) the optimal teacher qualifications for high quality ECE will become clearer.

OBJECTIVES

The objective of this systematic review is to synthesise the extant empirical evidence on the effects of higher teacher qualifications on early childhood learning environment. Specifically, this review will seek to answer the following questions:

1. Does teacher experience, and a teacher's level and type of education, have an impact on the quality of early childhood learning environments as measured by the Early Childhood Environment Rating Scale (ECERS; Harms & Clifford, 1980), the Infant Toddler Environment Rating Scale (ITERS; Harms, Cryer, & Clifford, 2003) and their revised versions (ECERS-R (Harms, Clifford, & Cryer, 1998) and ITERS-R (Harms et al., 2003))?

EXISTING REVIEWS

Whitebook (2003b) reviews a number of large-scale studies regarding the educational level of teachers and how the level of qualification potentially affects the early childhood learning environment. Whitebook's main finding is that teacher qualifications do matter, and that the environment is positively affected by higher qualifications. Whitebook's review, however, may have limited implications for the current education policy debate regarding raising teacher qualifications. Shortcomings of this review may be attributed to the researcher's lack of distinction between studies with different target samples (e.g., sampling at the level of the classroom or at the level of the learning centre) and the lack of common metrics (e.g., effect size) for meaningful comparison between studies.

A more recent meta-analysis was conducted by Kelley and Camilli (2007), who analyse the results of 32 studies (18 treatment-comparison studies and 14 studies with correlations between teacher education and outcomes). The authors examine the relationship between teacher qualifications and early childhood learning environment. For the purpose of answering our research question, a significant limitation of this study is that Kelley and Camilli (2007) aggregate four different constructs, including global classroom quality, teacher-child interactions, teacher pedagogical beliefs and knowledge, and classroom instructional activities, into a group of ECE outcomes. Aggregating these constructs makes it impossible to estimate the additional effect on a specific outcome (e.g., quality of learning environment) as a result of higher educational attainments by teachers (e.g., bachelor's degree or associate degree).

In conclusion, both of the previous reviews do not clearly identify how teacher qualifications effect childhood learning environments. Further, the reviews include few studies that measure the early childhood learning environment using a set of standardised measurement tools including: ECERS (Harms & Clifford, 1980); ITERS (Harms et al., 2003); ECERS-R (Harms et al., 1998); and ITERS-R (Harms et al., 2003). This is problematic because the different measurement tools included in the previous reviews are not necessarily comparable.

By including an updated review that is methodologically sound (i.e., follows the protocols outlined by Campbell Collaboration), this study will be able to examine the relationship between teacher qualification and the early classroom environment. Further, this review will provide a reliable answer to the current education policy debate regarding raising the level of teacher qualifications in the ECE sector.

INTERVENTION

In this review, the intervention is teacher qualification. The dependent variable (DV) in this review is the early childhood learning environment as measured by ECERS-R. The independent variable (IV) is teacher's highest educational qualifications (e.g., certificate, diploma, bachelor's degree). Therefore, all studies that measure the relationship between our proposed DV and IV will be included in this review. Interventions implemented in any

country, in any language, will be eligible for inclusion. The comparison condition will be learning settings with lead teachers without a bachelor's degree or associate degree (including Child Development Associate).

POPULATION

The population under consideration will be early childhood education programs. These programs may be delivered in indoor settings (centre-based and home-based classrooms) or outdoor environments. We assume that most studies will focus on centre-based classrooms, and thus our primary population of interest will be classrooms in early learning/care centres that are affiliated with state licensing agencies. Specifically, our focus will be on centre settings that serve all ages of pre-kindergarteners and kindergarteners prior to elementary/primary school.

OUTCOMES

Eligible studies will focus primarily on the quality of the early childhood learning environment (as measured by the ECERS-R). Seven categories of outcomes will be identified according to the subscales and items of those tools, including, for example: Personal Care Routine; Space and Furnishings; Language-reasoning/Listening and Talking; Activities; Program Structure; Interaction; and Parents and Staff.

STUDY DESIGNS

Eligible studies will be those studies that examine the relationship between teacher qualification and early childhood learning environment (as measured by ECERS-R) from 1998 (this was when the ECERS-R was introduced) to 2014. The main intervention must be an identifiable education program (e.g., bachelor's degree) received by the lead teacher. The details of intervention will include the year of education, course credits in early childhood education, and title of programme. Since teacher education qualification is not possible to be controlled by the researcher, the study designs we will include in the review are comparative and non-randomized studies, in which a group of teachers with bachelor's degrees is compared to at least one group of teachers with other qualifications (i.e., high school education, associate degree, and Child Development Associate (CDA) Certificate).

Statistical meta-analysis will be used to combine and analyse quantitative results if possible.

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ROLES AND RESPONSIBILITIES

Content: Dr. Matthew Manning has taught and published extensively in the developmental prevention area focusing explicitly on the early years, which includes preschool education. Dr. Susanne Garvis has taught and published extensively in the early childhood education area. She has extensive experience working with educators in the early childhood education sector and is fully trained in the use of environmental rating tools in preschool environments.

Systematic review methods: Dr. Matthew Manning has conducted and published several meta-analyses in high-ranking peer-reviewed journals including the Campbell Collaboration.

Statistical analysis: Dr. Matthew Manning, Dr. Christopher Fleming, and Mr. Gabriel Wong have extensive training in applied statistics and also those statistical procedures that are applied in meta-analysis.

Information retrieval: Dr. Matthew Manning, Dr. Chris Fleming and Mr. Gabriel Wong have been involved in developing search strategies using the Campbell and Cochrane technique.

FUNDING

Yes – Drs Matthew Manning and Susanne Garvis received internal funding from Griffith University to conduct this research. It is anticipated that the draft review will be completed by October 2014.

POTENTIAL CONFLICTS OF INTEREST

No

PRELIMINARY TIMEFRAME

- Date you plan to submit a draft protocol: May 2014.
- Date you plan to submit a draft review: October 2014.

AUTHOR DECLARATION

Authors' responsibilities

By completing this form, you accept responsibility for preparing, maintaining, and updating the review in accordance with Campbell Collaboration policy. The Coordinating Group will provide as much support as possible to assist with the preparation of the review.

A draft protocol must be submitted to the Coordinating Group within one year of title acceptance. If drafts are not submitted before the agreed deadlines, or if we are unable to contact you for an extended period, the Coordinating Group has the right to de-register the title or transfer the title to alternative authors. The Coordinating Group also has the right to de-register or transfer the title if it does not meet the standards of the Coordinating Group and/or the Campbell Collaboration.

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Date: 14 January 2014