



RESEARCH REPORT

Rapid Evidence Assessment on Quality Issues in Early Years Education in China

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TABLE OF CONTENTS

| | |
|---|----|
| 1. RESEARCH INTRODUCTION | 4 |
| 2. METHODOLOGY | 4 |
| 3. ANALYSIS | 8 |
| 3.1 ECE workforce and teachers' initial education | 8 |
| 3.2 ECE equity | 9 |
| 3.3 ECE policy, programme development and reform | 12 |
| 3.4 Cross-cultural perspective comparing Chinese ECE with other countries | 15 |
| 3.5 ECE evaluation, outcomes and child's assessments | 17 |
| 3.6 ECE and parents | 18 |
| 4. SYNTHESIS AND CONCLUDING REMARKS | 19 |
| 5. REFERENCES | 22 |

1. RESEARCH INTRODUCTION

This Rapid Evidence Assessment (REA) aims to map out what academic research has been published in the last decade (2010-2019) about Quality Early Childhood Education (ECE) in China. This choice of focusing on the last decade is based on the fact that since 2010 China defined ECE as a national priority (Li, Deng, and Liu, 2015). Despite much research addressing this topic has been published in Chinese (Hu et al., 2017), the academic production in English is very limited. By describing the extent to which research has permeated the international and global spaces of academia, this corpus can be used to illuminate future policy decision and research.

To date, many studies about quality Early Childhood Education have been conducted in Western countries (see for example Anders et al., 2012; Curby et al., 2009; Pianta et al 2008 ; Sylva et al., 2011). Although these studies can provide some insights for ECE in China, empirical evidence that takes into account the country unique cultural and social characteristics is needed because what works in one country may not work in another context. Therefore the current review addresses this gap by examining the following research question: What is known in the scientific literature published in English about quality early years education in China?

2. METHODOLOGY

A Rapid Evidence Assessment (REA) or Rapid Systematic Review (RSR) is an accelerated approach to identify, assess and synthesize the best available evidence on a topic (Mulrow, Cook and Davidoff, 1997). It aims to provide ‘a balanced assessment of what is known (and not known) in the scientific literature about an intervention, problem or practical issue by using a systematic methodology to search and critically appraise empirical studies’ (Barends, Rousseau & Briner, 2017, p.4). Despite these merits, a limitation derived from the ‘rapid’ nature of the review needs to be highlighted: by for example limiting the number of reviewers to one, the appraisal of the studies is more prone to selection bias than systematic reviews (Mulrow, Cook and Davidoff, 1997).

Search terms

The first finding of this REA is that a paucity of research regarding quality ECE in China has been published in the last decade in English. Although a vast corpus of research on this topic was

found when using Google Scholar (e.g. more than 50,000 sources), as soon as the search strategy was refined by including only peer-review articles, book chapters and dissertations produced in the last decade in education-related databases (Australian Educational Index, British Educational Index, Eric Proquest, ProQuest Education and UCL Explore), the amount reduced from over 50,000 resources to less than 100. Therefore, the quality of Chinese ECE research reported in English during the last ten years varies considerably.

Table 1a: key words used and number of sources found in Google Scholar

| Key words | Number |
|--|---------|
| Quality Early Childhood Education and Care AND China | 58,9000 |
| RCT Quality Early Childhood Education and Care AND China | 24,200 |
| RCT Education Quality Early Childhood AND China | 23,600 |
| Child outcomes preschool education quality AND China | 17,100 |
| Quality preschool provision Education AND China | 16,800 |
| RCT Education Quality Early Childhood AND China (from 2015- to 2019) | 16,000 |
| RCT child outcomes preschool education quality AND China | 14,500 |
| Meta-analysis Quality preschool provision education and AND China | 14,300 |
| Meta-analysis child outcomes preschool education quality AND China | 13,900 |
| RCT Quality preschool Education AND China (from 2015- to 2019) | 5,570 |

Given the vast amount of resources and variation in quality, the search was refined by using the key words in education-oriented databases as summarised in the following table:

Given the vast amount of resources and variation in quality, the search was refined by using the key words in education-oriented databases as summarised in the following table:

Table 1b: key words used and number of sources found in education-related databases

| Key words | Database | Number |
|--|-------------|--------|
| Early Childhood Education (any field) AND China (any field) | UCL Explore | 5,323 |
| Early Childhood Education (in the title) AND China (in the title) | UCL Explore | 212 |

| | | |
|--|---------------------------------|-----|
| Early Childhood Education (in the title) AND China (in the title) after 2010 | UCL Explore | 78 |
| Early Childhood Education (in the title) AND Chinese AND Quality (in the title) after 2010 | UCL Explore | 10 |
| Chinese Early years education and Care (in the title) | UCL Explore | 1 |
| Early Childhood Education (title contains) AND China (in the abstract) | British Educational Index (BEI) | 9 |
| Early Childhood Education (title contains) AND China (in the abstract) | Proquest Education | 19 |
| Early Childhood Education (title contains) AND China (in the abstract) | Australian Educational Index | 5 |
| Early Childhood Education (title contains) AND China (in the abstract) | Eric Proquest | 120 |
| Early Childhood Education (title contains) AND China (in the abstract) after 2010 | Eric Proquest | 13 |

Corpus description

The first point to consider is that there were many repetitions between the sources found in the five education-related databases (Australian Educational Index, British Educational Index, Eric Proquest, ProQuest Education and UCL Explore). More precisely, the 78 sources found in UCL explore Early Childhood Education (in the title) AND China (in the title) after 2010, were repeated in the other education-related databases. After excluding 4 repetitions within UCL explore and 4 sources that referred to primary instead of pre-primary education, a total of 70 sources were included in the analysis and synthesis stage.

A breakdown of sources according to type shows five dissertations, five book chapters and sixty journal articles. A breakdown of sourced according to years, suggests a steady increment in quantity, ranging from 4 in 2011, to 13 in 2016. In terms of the 60 articles, they were published in 46 different journals. Also most of the articles have been produced by different authors, but there is one prominent author that has been the first author in more than 10 journal articles. A breakdown of sources according to content, showed 6 main topics: (1) ECE workforce and

teachers' initial education; (2) ECE equity; (3) ECE policy, programme development and reform; (4) Cross-cultural perspective comparing Chinese ECE with other countries; (5) ECE evaluation, outcomes and child's assessments; (6) ECE and parents (see details in the Table 2). These topics will be used in the next section to report the analysis of the sources.

Table 2: Main topics of the 70 sources

| Main topic | Number |
|--|--------|
| 1. ECE workforce and teachers' initial education | 19 |
| 2. ECE equity | 17 |
| 3. ECE policy, programme development and reform | 13 |
| 4. Cross-cultural perspective comparing Chinese ECE with other countries | 9 |
| 5. ECE evaluation, outcomes and child's assessments | 6 |
| 6. ECE and parents | 6 |

A breakdown of sources according to authors, suggests that almost half of the sources (34 corresponding to 49%) have been produced by authors with Chinese names only; 36% (25 sources) were produced by teams of Chinese and non-Chinese Authors, and 11 sources (16%) were produced by authors with no Chinese names. In other words, although most of the ECE sources were locally produced, the global academic publication of Chinese ECE in English is also considerable (see Table 3 for details).

Table 3: Names of the authors of the 70 sources

| Chinese Authors only | Chinese and non-Chinese Authors | Non-Chinese Authors only |
|----------------------|---------------------------------|--------------------------|
| 34 | 25 | 11 |

3. ANALYSIS

3.1 ECE workforce and teachers' initial education

Chinese ECE workforce and teachers' initial education face challenges that impact directly on quality and equity of provision. First of all, there is limited qualified teachers, especially in rural areas (Xie, Med, Chen, Squires, Li, Liu and 2018), which is associated with a high child-to-teacher ratio (1:35 or more) (Fees, Hoover and Zheng, 2014). Many teachers do not have a teaching qualification certificate and the general level of education is relatively low, with the majority having a secondary specialised school diploma or postsecondary college diploma. ECE workforce also lacks direct experience in the Western-derived educational practices and find it difficult to implement these new philosophical ideas in meaningful ways (Fees, Hoover and Zheng, 2014). ECE also remains a highly gendered workforce, with only 2% of full-time preschool male teachers (Ministry of Education of the People's Republic of China's 2014, in Xu and Waniganayake, 2018).

A small pilot case study conducted by Zhang and Yu (2017), explored five ECE teachers' professional identity in mainland China. They reported that although ECE teacher roles and identities were not valued and usually victim of social bias by those out of the profession which saw them as babysitters, the teachers' themselves valued their role and developed role identities ranging from parents, teachers, friends, dancers, artists, and engineers. The authors highlighted the need to include different stakeholders (such as parents) in dissemination activities oriented to increase the professionalization of Chinese ECE workforce.

Closely linked to the issues of low social status of the profession, the quality of interactions between teachers and children, which research has shown as a critical factor that impacts on children's outcomes (Pianta et al., 2008), has progressed little in the last decade. In line with Pan and Liu (2008, in Li, Wang and Wong, 2011) who found little progress in teacher-children interactions and organization of curriculum activities except in more superficial aspects (such as arranging indoor space, scheduling, and paying attention to individual needs), Li, Wang and Wong (2011) reported a belief-practice gap in teachers' practice: whilst half of teachers advocated for child-initiated approaches, their most common pattern of teaching was whole-class-based, teacher-directed, and theme-based direct instruction. The authors also highlighted a policy-practice gap in teachers' practices: instead of play, rote learning, copying exercises,

reciting and testing were more frequently observed. Li, Wang and Wong (2011) also reported a mismatch between teachers' beliefs and pedagogical practices in literacy in Shenzhen kindergartens. Notably Hu et al (2019) recently used longitudinal methods (HLM) to predict children's development from teacher-child interaction quality in preschool. They concluded that, in line with the literature coming from other contexts, after controlling for Socio-Economic Status (SES) and gender, the quality of teacher-child interactions at age 3 helped predicting the developmental outcomes of children in elementary school.

Some of the sources developed a comparative perspective when researching teachers. Li, Wang and Wong (2011) examined teachers' beliefs and literacy instruction in five Shenzhen kindergartens. After observing ten childhood classrooms for one week, and interviewing classroom teachers and surveying teacher assistants (N = 20), the authors also reported a remarkable belief-practice gap as well as a policy-practice gap. Whilst most of the curriculum reform ideas were expressed by teachers, they were not implemented in their teaching practice. The traditional Chinese model (with the teacher directing the whole-class session) was prevailing among the researched classrooms. The authors argued for the imperative of considering the prevailing culture in the education system before policy implementation.

Liu and Pange (2014) surveyed 46 Chinese early childhood teachers from three settings located in three urban cities (Beijing, Shenyang and Siping). They reported that the main barriers perceived by teachers to integrate ICT into their practice were first-order barriers (such as lack of hardware, lack of teaching content and material, as well as lack of pedagogical models), whilst second-order barriers (such as lack of teachers' interest, and lack of teachers' support) were identified by participants as less predominant.

3.2 ECE equity

ECE equity is an ongoing challenge, as many Chinese teachers and parents believe that children should perform and learn at the same rate, so if for example a child learns slower, it is assumed that the child should be responsible, not the group (Hu and Szente, 2010). In this context, although China legislated the inclusion of children with disabilities in kindergartens almost three decades ago, progress has been slow as teachers struggle to integrate and address their needs in the curriculum (Fees, Hoover and Zheng, 2014). Many authors argue that inclusion is not only a teacher training necessity in China, but it requires a cultural change because key stakeholders (such as parents without children with disabilities) tend to be against inclusion.

Lai and Gill (2014) conducted a qualitative study to explore perspectives of parents with and without children with disabilities, teachers, and school principals on children with disabilities in integrated early childhood centres in Hong Kong. They reported that although participants supported integration in principle, parents without children with disabilities were against an inclusive policy in mainstream ECE centres, by favouring those children who attained the highest academic achievement. To promote an inclusive ECE policy, the authors suggested reducing elitism influenced by the Confucian heritage culture in society, increasing public education about disabilities and integration, and increasing training opportunities for teaching staff in integrated centres. In line with Lai and Gill (2014), the study conducted by Maka, Zhangb, Fana and Zhuc (2018) applied a survey that was answered by over 200 parents from the Hebei province (125 with and 83 without children with disabilities) and used Confirmatory Factor Analysis to analyse its results. Overall, parents were highly supportive of inclusion, but thought unfeasible to provide an inclusive quality early education provision.

Zheng, Maude, Brotherson and Merritts (2016) conducted a small qualitative study to investigate the experience of 6 families of young children with disabilities receiving ECE services and supports in southwest China. They concluded that although some progress for young children with disabilities has been made in the policy arena in the last decade, pending issues are:

- lack of a screening and early identification system
- lack of assistance in the identification of young children with disabilities
- lack of well-qualified personnel to assess and/or implement services for this population
- limited or misinformation on typical and atypical development, laws, and policies
- lack of an integrated and coordinated system related to ECI (Early Childhood Intervention)
- limited interinstitutional connections
- inadequate investment in ECI by the central government
- ineffective implementation of existing laws and policies supporting ECI.

A qualitative study focusing on characteristics of early childhood educational settings and inclusive practice in three Hong Kong mainstream preschools, concluded that effective practices determined by participants included: (1) collegial support, (2) nutrition and health considerations, (3) environment management, (4) curriculum adaptations, (5) setting up of inclusive classes, (6) team teaching, (7) IEP/IFSP, (8) transition preparations, (9) professional development, and (10) family involvement (Zhang, 2011).

Focusing on ECE equity in terms of diversity ethnic backgrounds, millions of migrant children have no access or attend the lowest quality provisions (Ying and Szente, 2010). Some minority emigrant children in China, such as Tibetans and Uighurs, are specially disadvantaged and at greater risk of social exclusion in an educational system that does not value their cultural differences (Ancheta Arrabal, 2015).

Also urban-rural disparity in ECE translate into a widening equity and quality gap in student outcomes. For example, enrolment of eligible children in rural areas is 30% lower than urban areas. Teachers with a qualification certificate is 82.5% in urban areas, versus 61.5% in rural areas (Ministry of Education, 2009, in Liu & Pan, 2013). Rural kindergarten education tends to be rated as low care, low curriculum implementation, poor daily routine and poor physical environment (Liu et al. 2012, in Liu & Pan, 2013).

Hu, Killingsworth Roberts, Sao & Guo (2016) conducted a qualitative study (including teacher surveys, interviews, and observational field notes) in 217 kindergarten classrooms in the large agricultural, rural province of Hebei serving socioeconomically disadvantaged students. They stressed that despite federal and provincial governments' articulated goals pro ECE, rural local governments are not meeting the requirements for ensuring quality in terms of (a) enrolment, class size, and student-teacher ratios; (b) facilities, basic furnishings, and materials; (c) teacher qualifications; and (d) curriculum and pedagogy. The authors called upon reform policy to increase ECE quality by affiliating quality kindergartens with existing elementary public school structures, and to improve teacher quality by advancing teacher benefits, professional status, and professional development opportunities. However, most of the ECE budget is invested in public programmes run by the Ministry of Education and other agencies serving affluent urban areas (Hu & Roberts, 2013, in Hu, Killingsworth Roberts, Sao & Guo, 2016). Urban children start much earlier (between 2 and 4 years-old) than rural children (five and six years old) (Hu, Killingsworth Roberts, Sao & Guo, 2016).

Contrasting with previous studies, a qualitative study (focus groups) with 7 administrators from a university-affiliated kindergarten programme in a major urban city on mainland China concluded that (1) the kindergarten curriculum reflected changes in China's educational goals, the view of child, and needs of the country; (2) contemporary kindergarten practices reflected a philosophical change from whole group, teacher-led instruction to inclusion of individualized, child-guided experiences; (3) the physical classroom environment reflected revised educational goals and the

child as an actively engaged participant in his/her own learning; (4) kindergarten teachers purposefully engaged families as partners in the child's education, and (5) teachers suggested that international colleagues should understand the current philosophy of education developed within the Chinese culture (Fees, Hoover and Zheng, 2014). This disparity regarding the quality of ECE provision found by Hu et al (2016) and Killingsworth-Roberts et al (2014), reinforces the evidence describing ECE quality divide between urban and rural contexts.

In conclusion, ECE quality varies by resources available and interpretation of standards by local authorities (Fees, Hoover and Zheng, 2014; Xi and Melhuish, 2017). Children's socioeconomic status strongly determines their access to quality ECE provision, which translates into equity problems (Hu, 2015). Chinese children's inclusion into ECE provision is further limited by their status in terms of ethnic minority, rurality and disability.

3.3 ECE policy, programme development and reform

Chinese ECE is the result of the hybrid influence of three cultures: the traditional Confucian values (e.g. students' respect for teachers and adults), communist ideas (e.g. whole-class instruction, emphasis on teacher authority and discipline, content knowledge, memorization and personal effort), and Western curricular influences (respecting children, active learning, play-based teaching and learning, and teaching and learning through daily life) (Zhu and Zhang, 2008; Hu and Li, 2012; in Fees, Hoover and Zheng, 2014).

A major pedagogical change (from traditional teacher-directed practice to the adaptation of Western child-centred philosophies) that resulted from the assimilation of globalization and western pedagogical principles, is currently taking place in the ECE field (Fees, Hoover and Zheng, 2014). In this context, the westernization of early childhood education in China since 1980s can be seen as the result of adopted western curricula programs, such as Montessori, Reggio Emilia and high/scope methods. Whilst these 'imported' ideas have emphasized respecting children, active learning, and play-based teaching and learning, they have been challenged by local scholars and practitioners (Li, Wang and Wong, 2011). The cultural appropriateness of these principles remains an issue, as there are strong advocates for keeping aspects of Chinese traditional culture (Xi and Melhuish, 2017). The view that Chinese have much to learn from foreign experts, as well as Western specialists have much to learn from China is strongly supported (Lee, 1992, in Fees, Hoover and Zheng, 2014, p.233). This tension is particularly exacerbated when trying to define quality, as 'Western' and 'traditional' conceptions

of quality ECE, differ (Huo, Neuman, and Nanakida, 2015). For instance, 'risky play' is seen as quality pedagogy by research conducted in Western countries, but it differs dramatically from Chinese traditional conceptions that evolve around mastering higher order skills through rote learning and repetition (Xu and Waniganayake, 2018).

The cultural context is also mainly seen as a barrier. For example, Chien and Hui (2010) argued for an incompatibility between creativity education and traditional Chinese culture, which values conformity, discipline and an authoritarian style of teaching. The promotion of child-centred, progressive methods has received critics from those sectors supporting traditional teacher-directed curriculum (Pan and Liu 2008, in Li, Wang and Wong, 2011). The 'blind worship of foreign things' in Chinese early years is seen as a drawback that jeopardize the development of quality provision (Tao, 2018, p.89).

Focusing on provision (Zheng 2010, in Fees, Hoover, & Zheng, 2014), China's early childhood system is formed by three types of programmes:

- Nursery: children approximately 2 months to 3 years of age. Nurseries are supervised by the local Women's Federation.
- Kindergarten: children approximately 3-6 years of age (although some offer programmes for 2-year-olds). Kindergarten programmes include single-age groups: nursery class for 2- to 3-year old, K-1 (Xiao Ban) for 3- to 4-year old, K-2 (Zhong Ban) for 4- to 5-year old, and K-3 (Da Ban) for 5- to 6-year old. The majority of kindergarten classes are single age. They are supervised and their quality is judged by the local department of education. 12 % of all kindergartens are government public, 20 % are run by local area education departments, and 65 %, are private (Ministry of Education 2009, in Fees, Hoover, & Zheng, 2014). While kindergarten is not compulsory, nearly 98 % of children in urban areas attend (Zheng 2010, in Fees, Hoover, & Zheng, 2014). Kindergartens are also a primary socializing entity for children, who are feared spoiled by their parents -a consequence of the one-child policy. Kindergartens affiliated with departments of education or state organisations and public corporations typically represent higher quality and are best resourced and staffed than private ones that tend to be of lower quality (Hu and Li 2012, in Hu, 2015).
- Pre-primary: these are part-day programmes for children 6 years old the year prior to primary school entry (Zheng 2010, in Fees, Hoover, & Zheng, 2014). They are located predominantly in the rural areas and heavily prepare children for elementary school (e.g. calculation and literacy). They are supervised by the local department of education (Zheng 2010, in Fees, Hoover, & Zheng, 2014).

Despite the enormous participation in ECE in absolute terms, when the percentage of participation is analysed according to regions, room for improvement emerges. More precisely, although most of eligible children (around 70%) participate in preschool in China (Ministry of Education, 2017, in Hu, Fan, Wu, LoCasale-Crouch & Song, 2019), nearly 48 million age-qualifying children (three to six) are in need of ECE services. Especially in rural areas only a third of children have access to some form of ECE (Wu et al., 2012). Programme quality has been undermined by the rapid kindergarten expansion process (Xi and Melhuish, 2017). In this context, private preschools are generally lower quality than public schools (Hu, Yang and Leong, 2016). There is also scarce public funding for ECE: 0.06% gross domestic product (Wang 2011, in Liu & Pan, 2013) and 1.3% of the total budget for education is spend in the sector (Wu, Young, & Cai, 2012).

Early childhood education in China has undergone great changes both in policy and practice in the last three decades (Xi and Melhuish, 2017). Xiaodong (2010) categorised these changes into three consecutive stages:

- Consolidation of provision (1978 to 1993)
- Market economy weakened the funding basis (1993 to 2002)
- Private providers as major players (2002 to the Present)

The 2010 ‘National Plan for Medium and the Long-term Program for Education Reform and Development’ policy on early childhood education (also known as ‘spring for ECE in China’) made significant progress by increasing to 3-years the early childhood programme enrolment, clarifying the governments’ main responsibilities for the provision of early childhood education, increasing the funding for early childhood education (especially for disadvantaged children), strengthening teacher capacity, and improving programme quality (Zhou, 2011). Despite this great policy improvement at the national level, the 3-year Action Plan developed by each province to implement the policy was coupled with challenges. Liu & Pan (2013) argued that although the national policy defined the responsibilities of the government to promote social equity by defining ECE as an integral part of education and social public welfare, its implementation at the local government level has been irrational and ineffective, as it collides with the macro social and economic system. Liu and Pan (2013) concluded that policy strategies needed to be in place before policy implementation could be effective. They also stressed that although the policy set ambitious goals (75% of Chinese children (compared to estimated current enrolments of 56%) will receive three years of preschool education by 2020), challenges derived

from universalising ECE provision and improving ECE quality for socio-economically disadvantaged children remains unresolved.

The policy shifts experimented in the last three decades (from ECE services seen as ‘public goods’ provided by the government on the grounds of need in the 80s, to ECE services conceived as ‘private goods’ provided by the market according to ability to pay in the 90s), saw a dramatic growth of private ECE centres that cannot be accessed given their high fees (Liu and Pan, 2013).

Policy suggestions for improving ECE in China include:

- developing legislation frameworks
- implementing intervention-based preschool programmes
- prioritising policy development and financial investments for the less-developed areas
- incentivising the private sector to develop a universal preschool education system
- establishing a separate administrative body at local government level for childcare services
- standardising and regulating staff training and qualification requirements for childcare workers
- creating community-based childcare networks (Xi and Melhuish, 2017).

Despite many suggestions, the policy for quality ECE has not been implemented. Hui Li and Lu (2018) conducted recently a Chinese ECE policy analysis applying Kingdon's (1995) multiple streams framework (MSF). The results indicated that although stakeholders were willing for the legislation on compulsory preschool policy, the law has not been enacted. The authors concluded that Kingdon's model should be modified to consider China's unique society, where the final policy decision lies not just within entrepreneurs and policymakers as the model suggests, but within the ruling Communist Party. The conclusion of the need to pay a closer look at the context instead of applying foreign models that do not work, also resonates with Lai and Gill (2014, p.345) when studying integration of children with disabilities and concluded that ‘the policy must be adopted and owned within the local settings if it is to work properly’.

3.4 Cross-cultural perspective comparing Chinese ECE with other countries

Some sources found in the REA compared Chinese ECE with other countries, such as the U.S, South Africa, Sweden or a Low and Middle Income country (LAMIC). Chien and Hui (2010) considered early childhood teachers' evaluative criteria and opinions about children's creativity.

They compared their perceptions on creativity in three Chinese societies (Taiwan, Hong Kong and Shanghai) and found significant differences at society level, with Taiwan teachers scoring significantly higher in influential factors of creative performance than Hong Kong or Shanghai. Li, Chi, DeBey and Baroody (2015) compared mathematics teaching practices of 74 U.S and 67 Chinese early childhood teachers. They used questionnaires and analysed its results statistically using a two-tailed z tests for comparing proportional differences between U.S. and Chinese participants, as well as qualitative analysis for identifying emerging patterns in the open-ended questions. They found that whilst 27% and 20% of U.S teachers did not set any goals for mathematics or use a curriculum or any resources respectively, only 3% of the Chinese participants did not do so. Also, emerging curriculum was the prevailing approach for 3- and 4-year-olds in the U.S in comparison with mathematics-specific teaching being the primarily form of instruction in China.

Shafiq, Devercelli and Valerio (2018) compared the outcomes of ECE participants and non-participants in 12 LEMICs (including Yunnan Province of China). They analysed data from 'Skills Toward Employability and Productivity' survey of urban adults in 12 low- and middle-income countries and used OLS regression and propensity score matching techniques for their analysis. Particularly for China, the ECE participation rates (defined as the percentage of adults who said that they attended a kindergarten, crèche, daycare, nursery school, or Montessori before age 7) was 41,5% among the survey respondents, with a big variation by social origin ranging from 30.8% of low to 46.4% of middle high SES. From the OLS and PSM models conducted, a strong statistical association was found between ECE and higher educational attainment in China, where individuals who received ECE had approximately 0.9 years of additional schooling, with even larger coefficient sizes for children from lowest social origins, which is consistent with the literature reporting larger ECE benefits for the most disadvantaged children.

Ito and Izumi-Taylor (2013) conducted a mixed-method study (survey responded by 1,587 followed by focus groups) to examine fathering perspectives among American, Chinese, Japanese and Swedish in-service and pre-service early childhood teachers. They reported that teachers' country and fathers' involvement influenced teachers' concepts of fathering. Particularly for China, teachers considered the traditional role of women more important than their American, Japanese, and Swedish counterparts.

Tao, Oliver and Venville (2012) explored long-term outcomes of participating in ECE on Year 6 students' Science education in three schools in China (n = 140), and three schools in Australia (n = 105). Students' understanding of scientific concepts was assessed by a Science quiz and an in-depth interview. They found that whilst children from high socioeconomic schools in China and Australia had similar understandings of science, the medium and low socioeconomic schools in China had significantly lower science quiz scores compared with their Australian counterparts coming from similar backgrounds. This divergence indicated that participating in early childhood science education placed Australian children at an advantage.

3.5 ECE evaluation, outcomes and child's assessments

Some of the sources focused on tools and measurement scales devised for assessing quality ECE provision and children's outcomes. These sources reported on psychometric analysis, contextualisation and comparison known to be key when conducting ECE research in LMICs (Murray-Kolb et al., 2014). Hu (2015) compared cultural differences in two quality measures applied to Chinese kindergartens: the Early Childhood Environment Rating Scale-Revised (ECERS-R) and Zhejiang's Kindergarten Quality Rating System (KQRS). A tension emerges when trying to assess the quality of Chinese ECCD using measures developed in other contexts with different values and views that may not be culturally appropriate (Hu, 2015). The results showed that in 105 kindergarten classrooms observed using the ECERS-R, the overall score was 3.72 out of 7.0, indicating an overall low quality. The averages for the subscales were: Space and furnishing (M = 3.49), Personal care routines (M = 3.50), Language-reasoning (M = 3.49), Activities (M = 2.37), Interactions (M = 5.05) and Programme structure (M = 2.98). The author stressed the need to pay attention to culturally relevant dimensions embedded in the concepts of ECCD quality, such as what is understood by 'diversity', 'relaxation', 'substantial amount of time for free time' and 'provision for children with disabilities'.

Fleer and Li (2016) developed a child-centred evaluation model oriented to gain children's perspectives when conducting a commissioned evaluation into an Early Childhood Care and Development (ECCD) Project implemented by Plan China in three rural communities in ShaanXi province during 2006 and 2009. Despite the paper makes no reference to the outcome of the evaluation, China is used as a background to only describe the children-centred methodology.

Ye et al (2019) explored the association between maternal IQ and early childhood motor development and whether maternal education mediated this relationship. They analysed data collected prospectively in the Chinese large-scale Ma'anshan Birth Cohort study (n=2,739).

Maternal IQ was evaluated using the Wechsler Adult Intelligence Scale-Revised by China (WAIS-RC) and children's motor development was evaluated at 18 months by the Third Edition of Ages and Stages Questionnaire. Baseline characteristics and maternal education was extracted from questionnaires and medical records. Logistic regression analyses and mediation analyses results showed that mothers with higher IQ had a significantly higher educational level and children with better motor development. Maternal education significantly mediated the association between maternal IQ and children's fine motor development. As maternal IQ was associated with motor development, the authors suggested that for women with lower IQ, interventions focusing on mothers' educational level is a promising strategy to ensure children's improved motor development.

3.6 ECE and parents

Some of the sources found in the REA focused on Chinese parental involvement, priorities and satisfaction with ECE provision. Aspects that have strongly shaped parental views are an exam-oriented educational system that requires mastery performance in subject matters, which in turn limits innovation (Fees, Hoover and Zheng, 2014); and the one-child policy implemented in 1978 that has strongly shaped ECE, as parents fear their child to be spoiled, and they have a keen interest in their progress. In this context, enhancement of social skills -such as collaboration and conflict resolution- are key parental expectations of parents of single children (Fees, Hoover and Zheng, 2014). Also, as China's economic growth intensifies and more women enter the workplace, the demand for high-quality childcare has steadily increased, particularly in urban areas. Despite the Chinese government has expanded ECE centres as a means for promoting children's outcomes and women's work participation, gender equality is still a challenge, as looking after preschool children is still heavily seen as a women's role (Ito and Izumi-Taylor, 2013).

Authors also agree that ECE is seen by many parents as the first step in a long competitive process for admission into the strongest college programmes. Parents seek the highest quality provision with additional extra-curricular programmes to prepare their child for elementary school. Whilst some researchers stressed that parents' expectations for academic preparation is their priority (Fees, Hoover and Zheng, 2014), others have argued that some parents value children's physical and emotional wellbeing over acquiring academic knowledge and skills (Hu, Yang and Leong, 2016).

When studying parental satisfaction from a southern China province towards ECE, Hu, Yang, Wu, Song and Neitxel (2018) found that the highest the parental educational level and their annual income, the more satisfied they were with ECE. Also teachers' teaching experiences, class size and the emotional support provided to the children, were significant predictors of parental satisfaction. Hu et al (2018) finding on the positive association between parental education, income and satisfaction, illuminates the apparent contradiction between different results. Given the enormous population and diversity within the country, the extent to which each study represents the population needs to be carefully considered. In this line, a major limitation of the studies revised in this review is the lack of national representative samples. By contrast, they tend to focus on one province, or in one Special Administrative Region (SAR), such as Hong Kong.

4. SYNTHESIS AND CONCLUDING REMARKS

A paucity of research regarding the quality of ECE in China exists (Hu, 2015). The present RAE analysed 70 sources that add to the existing literature on quality Chinese ECE published in English. The main conclusions derived from this REA can be summarised in the following seven topics:

Limited ECE workforce and teachers' initial education: there is a lack of qualified teachers, especially in rural areas. ECE workforce also lacks direct experience in the Western-derived educational practices and find it difficult to implement these new philosophical ideas in meaningful ways. There is also a high child-to-teacher ratio. The ECE workforce is seen as a feminised and low socioeconomic status job. Whilst most of the curriculum reform ideas are expressed by teachers, they tend not to implement them in their teaching practice.

ECE lack of equity: ECE quality varies heavily by resources available and type of provision (public better than private). Children's socioeconomic status strongly determines their access to quality ECE provision, which translates in equity problems (Hu, 2015). Chinese children's inclusion into ECE provision is limited by their status in terms of ethnic minority, rurality and disability.

Limited ECE policy, programme and reform implementation: Despite during the last decade policy development has been systematically developed in Chinese ECE, its implementation face

critical challenges. The ambitious goal of universalising ECE provision is far from being reached. Crucially, challenges derived from improving ECE quality for socio-economically disadvantaged children, rural, enrolled in the private system, from ethnic and migrant minorities, remains unresolved.

Deficit approach derived from cross-cultural perspectives: When comparing Chinese ECE provision with other cultures and countries, it is described by the research published in English mainly through a deficit lens: as lacking resources, prominence, quality, equity, diversity, creativity and inclusion. When taking a comparative approach, the only area that appears better, is the teaching of mathematics (Li, Chi, DeBey and Baroody, 2015).

Risk of implementing ECE evaluations, outcomes and child's assessments without considering the local context: The issue of how culturally appropriate are international tools used for assessing quality ECE provision and children's outcomes needs to be considered, as it is too easy to develop a deficit approach after applying instruments developed with other populations in mind. Research on psychometric analysis, contextualisation and comparison between local and international tools is a much-welcomed research known to be key when conducting ECE research in China.

ECE parents reflect the views and concerns derived from a competitive educational system: According to some authors Chinese parents prioritise the academic acquisition of knowledge and skills, whilst others have described as their main priority children's physical and emotional wellbeing, especially in relation to the only child policy. This tension can be derived from the fact that the more advanced their educational and socioeconomic position, the better and wider their perception of quality of the provision.

Finally, one major limitation noted in the methodology of the revised studies needs to be highlighted. Given Chinese immense population, the revised studies focused on specific regions but were not derived from random or nationally representative samples, therefore their results are highly dependent on the populations included. The great majority provided narrative descriptions of Chinese ECE across several regions, outlining the problems and issues that ECE face in different contexts. Only a minority of quantitative results from surveys and secondary data were presented. Overall, it appears that quality ECE provision is highly dependent on the socioeconomic characteristics of the populations where the provision is offered. For example,

urban cities with robust economic development, such as Beijing, Shanghai and Guangdong, show exemplary results (Ying and Szente, 2010; Hu et al, 2019), whereas rural ECE provision is systematically described as lacking quality. Another limitation is the lack of work examining ECE quality and its association with young children’s development, with one notable exception of the recent longitudinal study conducted by Hu et al. (2019).

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