

REVIEW

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# Early childhood teachers amid China's curriculum reforms: from a literature review

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## Abstract

This article examines the crucial role of early childhood teachers in China's ongoing curriculum reforms by addressing two key questions: (1) how teachers interact with the curriculum reform cycle, and (2) what specific roles they play within the reforms. We synthesize literature on early childhood teachers' involvement in China's curriculum reforms and provide insights for future improvements in teachers' status. Our analysis reveals that teachers contribute to establishing curricular goals, selecting content, and implementing instructional methods. However, they lack formal roles in setting educational goals and face limitations due to administrative decisions and societal expectations. Their knowledge and experience are often underutilized. Based on these findings, we propose increased teacher training to enhance their capacity and contribution, and improved policies for teacher recruitment, retention, and empowerment.

**Keywords:** Early childhood teachers, Early childhood education, Curriculum reforms, Educational administration, Teacher development

## Introduction

The curriculum is a critical dimension of education systems, and teachers play a pivotal role as a change agent in curriculum reforms. Teachers play a direct role in implementing the curriculum through tasks such as selecting learning materials, planning lessons, and delivering instruction in the classroom. In this sense, teachers are directly in charge of the implementation of a new curriculum, and they are considered the primary change agents who significantly influence the outcomes of curriculum reforms (Suo, 2014). There has been an appeal for more attention to teachers when considering improving education systems (UNESCO et al., 2016) and some national governments are seeing teachers as the "first resource" for education development (Central Government of People's Republic of China, 2018). However, in the context of curriculum reform in China, there is a lack of clear understanding regarding the roles that teachers have or should have in designing a new curriculum, planning reforms, and implementing curriculum changes to support reform efforts. To some educational practitioners, the roles may seem obvious based on their experience. However, for

others, the distinction between experiential knowledge and research findings may not be as clear. There is a crucial need for evidence-based research to comprehensively clarify and fully present these roles. This approach ensures that all practitioners have a well-defined understanding grounded in research, not just personal experience.

A review of the existing literature about teachers in curriculum reforms is indispensable for clearing up myths and delineating a discernment of what teachers *have done* or *should do* in curriculum reforms. In this article, we aim to bridge an important knowledge gap via a review of the existing literature closely associated with China's early childhood teachers' roles amid ongoing system-wide changes in the curriculum. We intended to answer the following two research questions: (1) What are the crucial relationships, as reflected in the curricular change cycle, that involved early childhood teachers in China's curriculum reforms? (2) What roles have early childhood teachers been playing in China's curriculum reforms?

Answering these two questions will contribute to a deeper understanding of the core issues of teachers' roles in China's early childhood education reform. First, examining the relationship between teachers and the reform itself can provide policymakers with valuable evidence. This evidence can then be used to formulate policies that better align with the realities of teachers' work. Second, by clarifying the specific roles of teachers in the reform, this study can identify areas where targeted support is most needed. This targeted support can ensure a smoother and more efficient implementation of the new curriculum requirements, which ultimately leads to higher education quality. Finally, understanding the specific roles of teachers in curriculum reform helps identify areas where targeted teacher training and career development programs can be implemented.

Throughout this paper, we define teachers' roles as their positions in relation to other change agents within the curriculum reform process. We focused on teachers in early childhood education, which has an immense impact on each individual's lifelong learning. For each individual, for instance, skills developed at the early childhood stage lay the foundation for future learning and professional success, and failure to invest in these years can lead to long-term and often irreversible effects (Naudeau et al., 2010). From a societal perspective, the ripple effects of limited early childhood development would pass poverty down across different beneficiaries for generations (Alderman, 2011; Heckman et al., 2009; World Bank, 2015).

Also, in this review, we concentrate on the literature regarding China's case for several reasons. First, China has a huge population of early childhood teachers, which renders its curriculum reforms rather high-stake. Second, early childhood education in China has been open to experiments with various sociocultural elements from other countries, which makes this case rather thought-provoking through cross-country comparisons. Third, the education reform in China employs a typical top-down approach with high efficiency, which is the approach typically shared by many government-led initiatives from other countries, notwithstanding its limitations. Fourth, China has had a wide array of curriculum reforms, they are ongoing and constantly changing, with complexities brought by its geographic diversity, which makes it rather challenging but especially meaningful to review China's case. Last but not least, China is widely recognized for its large-scale improvement in the accessibility of education for all and is being considered

by many other developing countries as an exemplar, considering that millions of the Chinese people were struggling with extreme poverty only a few decades ago.

## Background

To understand the roles and relationships of teachers in these curriculum reforms, it is essential to delve into the specifics of how curriculum reform has been carried out in relation to teachers in China. This section explores the historical stages and current dynamics of China's curriculum reforms, providing the necessary context to examine the involvement and impact of early childhood teachers.

### Context, policies, and planning

Education reform is often achieved along with socioeconomic movements, including curriculum reform. An overview of the system-wide socioeconomic context in conjunction with curriculum reforms over years would be helpful to elucidate key patterns that support further understanding of teachers' roles in China's curriculum reforms. Table 1, following the illustration from Huo (2015) and Cai (2005), synthesizes the existing literature about four historical stages of China's early childhood curriculum reforms till the end of the twentieth century. These stages were all marked by pivotal social movements or pioneering policy initiatives. Over this course of history, China's early childhood curriculum had been open to the curricular models from other countries, as demonstrated by its inclusion of models from Japan, the United States, the Soviet Union, and some European countries.

China's transition from a planned economy to a market-oriented one was accompanied by significant changes in its early childhood curriculum reforms in the twenty-first century. The central government gradually loosened its control over schools. The staffing, recruitment of teachers, and the design of teaching content were also decentralized from the Ministry of Education to the schools' jurisdiction (Guan & Meng, 2007; Mok & Ngok, 2008). Also, for the first time in history, a national policy document, the *National Outline for Medium- and Long-term Education Reform and Development (2010–2020)* (Central Government of People's Republic of China, 2010), acknowledged early childhood education development as one of the national government's priorities. Moreover, the official document *CCP Central Government and National Congress's Suggestions on Holistically Deepening Reforms to Innovate the Teacher Workforce in the New Era* (Central Government of People's Republic of China, 2018) proclaimed that teachers make the "first resource" for education development and further nationwide reforms and renovating the teacher workforce is a crucial undertaking of the government.

Pedagogical approaches nowadays typically require teachers to undertake more active roles. In the increased promotion of the school-based execution of the curriculum, school principals tend to have more say in the process to restructure a curriculum. Teachers are encouraged to proactively interact with children, parents, and principals, actively select educational content, design pedagogical methods that meet children's needs and engage themselves in the decision-making in kindergartens (Li, 2009). The *CCP Central Government and National Congress's Suggestions on Holistically Deepening Reforms to Innovate the Teacher Workforce in the New Era* (Central Government of

**Table 1** Four stages of China's early childhood curriculum reforms

Stages and historical events	Curricular features	Official documents
Stage one, started off with the Sino-Japanese War <sup>a</sup> in 1895	The first early childhood education institution in China was established in 1903, following a Japanese model (He, 2015)	The <i>Official School Regulations on Meng Yang Yuan and Home Education</i> , issued by the Qing government in 1904, was the first sign of the governmental regulation in early childhood education
Stage two, embarked on with the "May Fourth Movement" in 1919 <sup>b</sup>	The curricular models from U.S. and European countries turned popular in China, while Chinese educators like Heqin Chen and Xuemen Zhang were adapting the western frameworks to China's unique contexts and had established novel colleges to pilot the "unit-instruction" curriculum	The <i>Curriculum Standards for Kindergartens</i> , endorsed by the Kuomintang government in 1932, established a relatively complete and independent early childhood curriculum that fits with China, built on Chen and Zhang's work (Tang, 1970)
Stage three, marked by the establishment of the People's Republic of China in 1949 <sup>c</sup>	Curricular theories of Soviet educators fundamentally rebuilt China's curriculum into one that emphasized children's all-round development with a holistic knowledge system (Huo, 2015)	The <i>Temporary Instruction Outline for Kindergartens (Draft)</i> , which recognized the separate teaching for each subject while negating the "unit-instruction" curriculum (Cai, 2005) was released in 1952 by the People's Republic of China
Stage four, flagged by the endorsement of the "reform and opening up" policy in 1978 <sup>d</sup>	China's early childhood education researchers and practitioners reflected on China's past in early childhood education while embracing foreign models. The curriculum reforms experimented with the separate-subject curriculum and the holistic curriculum, from bottom to top, across different regions of the country (Cai, 2005)	The <i>Outline for Education in Kindergartens (Trial Draft)</i> was issued in 1981; the <i>Working Standards for Kindergartens</i> in 1996 and <i>Educational Guidelines for Kindergartens</i> in 2001 recognized the reform endeavors from across the country that feature a variety of curricular models (He, 2015)

<sup>a</sup>The First Sino-Japanese War (1894–1895) concluded with China's devastating defeat. This conflict shattered China's dominance in East Asia, eroding political and cultural confidence and raising the specter of colonization. The post-war Qing Dynasty government was compelled to pursue reform, accelerating comprehensive modernization efforts. Culturally and educationally, this period saw the abolition of the imperial examination system, which had endured for over a millennium, and a departure from Confucian educational principles in favor of modern education. There were competing trends in educational reform, with influences from both Western and Japanese models

<sup>b</sup>The abdication of the Qing Emperor marked the establishment of the Republic of China in 1912, which persisted until its retreat from mainland China in 1949, signaling the end of over two millennia of monarchic rule and the beginning of a democratic republic. This era saw significant cultural achievements in China, driven partly by political openness to Western influences, which gradually aligned China's educational system with Western norms

<sup>c</sup>Following the end of World War II, the Chinese Civil War erupted, culminating in the victory of the Chinese Communist Party over the Republic of China and the establishment of the People's Republic of China in 1949. Aligned with the Soviet Union, China's cultural and educational policies emulated the Soviet educational model

<sup>d</sup>In 1978, Deng Xiaoping initiated the policy of reform and opening-up, shifting China's political focus from ideological struggle to economic development and opening up to the world. This period also saw increased engagement and exchange with Western countries. Consequently, China's education system absorbed many Western approaches

People's Republic of China, 2018) emphasize the proactive role of teachers in adjusting to the information society and making the most use of new technologies from artificial intelligence to improve the efficiency of teaching and learning.

Here are some key terms for attention in our focused analysis. The *curriculum* is broadly conceived as an important facet of education quality, as defined by UNESCO (UNESCO-IBE, n.d.). Its meaning, annotation, and implementation may vary by context. We used *early childhood education* to refer to the education of children aged 0–6. It can be roughly divided into three stages or types: *nursery schools* for children aged 0–3, *kindergartens* for children aged 3–6, and *preschool* classes for children aged 5–6 in China (Zhu, 2002), though kindergartens in some regions of China also enroll children aged 2–3 (Zhu, 2009). *Teachers* at the early childhood stage included *preschool teachers* and *early childhood teachers*. Most of the research studies covered by our review addressed early childhood teachers. The *educational administration* was conceptualized as the country-, region-, and school-level educational authorities.

### Process and implementation

When zooming in on the *curriculum*, we emphasize the one category of curriculum from Schmidt et al. (2001), namely the Implemented Curriculum, because it is directly connected with teachers. Specifically, *Implemented Curriculum* refers to teachers' actual coverage of the intended curriculum. *Intended Curriculum*, another category from Schmidt et al. (2001), refers to the official content standards documents (e.g., syllabus, curriculum plan) or teaching materials (e.g., textbooks, teachers' guides, exercise books) that the educational administration provided. We chose the relatively simple categorization of the curriculum here to help concentrate on the actual *implementation* of the *intended* curriculum through teachers in curriculum reforms.

What are the existing stakeholders involved in the decision-making for curriculum reforms? Schmidt et al. (2001) identified five possible sources of authorities or stakeholders in the curricular decision cycle: national centers, subnational centers, schools, departments within schools, and teachers. Härkki et al. (2020) identified change agents such as collaborators, school administration, community, and regional and national support for teachers' self-improvement in curriculum reform in Finland. Liu and Teddlie (2003) categorized stakeholders in China's education system into four types: central agency, provincial agencies, municipal or district agencies, and school administrators (or principals), besides teachers. Suo (2014) revealed a threefold structure involving the national government, local governments, and kindergarten-level administration for enacting curriculum reform in China. Liu and Teddlie (2003) and Suo (2014) align with the five sources of stakeholders identified by Schmidt et al. (2001). These frameworks are crucial in understanding the roles of various stakeholders in curriculum reforms and directly inform our research questions by highlighting the specific roles teachers play within these structures.

Having this broader perspective is essential in a top-down decision-making system like China's, where the educational administration exerts significant influence. According to UNESCO (2014), in such systems, teachers' agency can be impacted by the educational administration in four aspects: (1) teacher recruitment, (2) teacher training, (3) teacher allocation, and (4) teacher retention. Meanwhile, Schmidt et al. (2001) identified four

possible roles in curriculum reforms: (1) “no formal role in curricular decision-making”; (2) “giving advice and making recommendations about curricular decisions”; (3) “constraining, vetoing, or modifying recommendations about curricular decisions”; and (4) “having final authority or approval of curricular decisions”. These existing frameworks offer insights into the potential roles teachers could play amid the dynamics with the administration.

### **Teachers’ roles on the implemented curriculum**

In this section, we peeked into teachers’ roles in the design and implementation of *goals for children, instructional contents, instructional methods, and evaluation* as part of early childhood curriculum reforms. These components were operationalized as key elements of Implemented Curriculum (Schmidt et al., 2001) introduced before. By examining these roles, we can better understand how teachers navigate and influence the curriculum reform process.

In terms of goals for children, three types of goals exist in China’s curriculum reforms, namely educational goals, curricular goals, and teaching goals (Chen, 2009; Li, 2001). A lack of clear knowledge of their distinctions has left teachers in confusion (Li, 2001). Current *educational goals* for early childhood development were specified in the *Guidelines for Learning and Development of Children Aged 3–6* (Ministry of Education, 2012). They detailed the expectations of what children aged 3–4, 4–5, and 5–6 should know and be able to do, having clarified different capacity levels for child development in physical health, language, socialization, science, and arts. According to the literature to date, there was a lack of information about teachers’ roles in shaping the overarching educational goals. *Curricular goals*, in contrast, are specific to each lesson that early childhood teachers would implement for an intended curriculum, often established by teacher groups. They are usually associated with educational goals and are vital to achieving the latter. In China’s context, teachers can freely contribute their ideas to the design of curricular goals as part of a work routine. The connection between curriculum goals and instructional goals is close. Curriculum goals are intended to provide guidance and framework for overall teaching, while instructional goals offer specific guidance for the content and activities of individual lessons. They complement each other and jointly facilitate the achievement of learning objectives. *Teaching goals* are more geared towards what is to be taught, which early childhood teachers can shape directly in their lesson planning. Built upon each teacher’s unique understanding of the contents to be covered in a class for a specific student group, these goals can elucidate the expected outcomes from each teaching activity, and prepare teachers for the step-by-step curriculum implementation. In China, early childhood teachers can freely design their teaching goals anytime before the start of their teaching (Chen, 2009).

There were concerns over the mismatch between the teaching goals and the educational or curricular goals, however. It might be attributed to teachers’ limited participation when educational or curricular goals were designed. According to Liu (2007), many teachers’ interpretations of policy documents were very different from scholars’ or kindergarten managers’ interpretations when it came to educational goals. This situation suggested that the implemented curriculum could be a distorted version of the intended

curriculum, for teachers were having mixed understandings of the educational goals that formed the basis of curricular and teaching goals.

In terms of instructional content, the existing literature indicates that teachers have limited involvement. Due to the strict hierarchy in decision-making processes within kindergartens, teachers typically have little influence on *textbook selection*. According to Suo (2014), textbook selection in kindergartens used to follow a three-fold structure. Firstly, the national government provided general guidance on textbook selection. Secondly, local governments, such as those at the provincial or city level, designated or created a set of approved textbooks for kindergartens within their jurisdiction. Thirdly, individual kindergartens chose textbooks from the approved list provided by local governments. This structure combined national regulation with local administration, aiming to introduce more flexibility and autonomy in textbook choices for early childhood education.

Additionally, it is noteworthy that in many Chinese kindergartens, instructional content often overlaps with that of early primary school grades. For example, many early childhood teachers teach children skills typically taught in Grade 1, such as reading, writing, and reciting Chinese characters and classics, as well as basic arithmetic with two- or three-digit numbers, and English vocabulary. These topics are typically part of the Grade 1 curriculum in primary schools (Qi, 2011). This focus on advanced content can deprive children of playtime and lead to a dislike of studying (Suo, 2014). Although many early childhood teachers are aware of this issue, they often lack the ability to effect change, as they are pressured to prepare students for highly competitive entrance exams for selective primary schools (Yao, 2017). In this environment, children, their families, teachers, and kindergarten administrators are all under significant pressure (Su, 2012).

Early childhood teachers in China demonstrate a remarkable ability to adjust their teaching approaches through lesson planning and classroom instruction, playing a significant role in shaping the instructional process. They proactively seek to diversify strategies, recognizing the importance of periodically altering instructional methods to engage children's attention and facilitate more effective learning (Chen, 2009). Moreover, a majority (82.8%) of surveyed teachers have received training in instructional methods, with many expressing a desire to further enhance their skills in this area (Dong, 2020).

However, despite their proactive stance and theoretical understanding of innovative teaching approaches introduced through curriculum reforms, a discrepancy exists between teachers' beliefs and their actual instructional practices. For instance, a significant portion of surveyed teachers did not effectively utilize children's play or preferred non-lecture methods, yet their instructional practices predominantly relied on lectures or did not align with their professed beliefs (Li et al., 2011; Pan & Liu, 2008). This disconnect highlights a gap between teachers' theoretical understanding and the practical application of instructional methods, which could impede the progress of curriculum reforms.

Examinations have become a part of the evaluation framework for kindergarten children in China over years. Despite the absence of official mandates from national or regional documents, these examinations persist, often creating added pressure

on young children, especially with the requirement for entrance examinations by selective primary schools (Zhang, 2016a, 2016b). While these examinations directly measure children's academic progress, they often fail to consider their long-term development since they are aligned with instructional contents and methods typically intended for primary school students (Sun, 2014). A significant gap remains in the literature regarding early childhood teachers' involvement in organizing these examinations. The extent of their participation and influence in this process warrants further exploration to understand their role in shaping examinations in kindergarten settings.

When it comes to evaluating teachers for accountability, many educational administrations in various regions tend to overly emphasize performance management (Ferreira & Otley, 2009). This approach often involves stringent assessment metrics and targets that teachers are expected to meet, focusing heavily on scores and other quantifiable outcomes. Such an emphasis can foster a competitive environment among teachers, where the primary focus shifts to outperforming colleagues rather than collaborating and sharing best practices. This competitive atmosphere can hinder the cultivation of collegial relationships, which are essential for creating a supportive and collaborative teaching community. It can also detract from teachers' ability to innovate and engage in meaningful professional development, which are critical components for effectively supporting curriculum reforms. As noted by Cao and Li (2011), access to professional support is necessary for teachers' growth and their capacity to adapt to and implement new curricular changes.

### **Teachers' situation in association with educational administration**

Considering the rather dominant power of the educational administration in China's curriculum reforms, we explored to what extent teachers can make a difference. Based on UNESCO's (2014) framework described before, below we explored teachers' roles amid the educational administration's recruitment, training, allocation, and retention processes when preparing for early childhood curriculum reforms.

In recruitment, the national government's robust teacher recruitment programs had greatly alleviated the long-existing early childhood teacher shortage problem (e.g., Wang et al., 2014), although there were regional disparities and this teacher shortage problem still existed and may have turned worse in certain geographic areas in China. That said, individual teachers, in general, did not have a say in the top-down process that determined recruitment strategies directly affecting them. Between 2010 and 2018, there was an unprecedented increase in the number of kindergartens by 77.3% and a corresponding 145% increase in the number of early childhood teachers and staff across the country (Chen, 2019). Meanwhile, according to statistics from UNESCO-UIS (n.d.a.), efforts were made to increase the number of teachers and reduce class sizes. It was supported by the evidence that China's early childhood pupil–teacher ratio on average shrunk to 17.4:1 from 22.3:1 in 2013–2018. Nonetheless, again, there were regional disparities, and the nationwide statistics did not reflect the realities in China's certain regions. For example, in 2017, the average early childhood pupil–teacher ratio in Chongqing City was 38:1, which was about twice the national average, indicating significant teacher shortage problems (Yang & Wang, 2017). Attributed to the “universal two-child policy” (Zeng & Hesketh, 2016), Beijing embraced an increase in new births, and consequently a shortage



of kindergartens and early childhood teachers; the Beijing municipal government established new kindergartens in collaboration with local primary schools and turned part of the public space into the infrastructure of kindergartens (People's Daily, 2016).

UNESCO-UIS (n.d.b., n.d.c.) defined "qualified teachers" as individuals with the minimum qualifications to teach at a specific education level. It is worth noting that, China's educational administration retained the final authority over the recruitment of teachers to ensure the quality of teachers aligns with the demand for curriculum reforms, and yet it had not established official professional standards regarding the quality of early childhood teachers to be recruited. In this situation, it was not surprising that many of China's early childhood teachers were found unqualified even when they had been certified to teach children. Many early childhood teachers were often complained about by parents and kindergarten managers due to their limited qualifications (Kong & Wang, 2016). Studies in provincial and local contexts showed that the certified teachers may have had limited knowledge structure or appreciation of diversity (Wang, 2017), lacked ethics or integrity (Huang, 2018), or were not equipped with satisfactory teaching skills (Tong & Zhu, 2018). The *Professional Standards for Early Childhood Teachers*, released in 2011 (Ministry of Education, 2011a), helped clarify the qualification for supporting teacher recruitment. However, this document alone was not sufficient to meet the official minimum requirements in teacher recruitment, indicating a gap that needs to be addressed soon (Guo et al., 2014). The good news was that the educational administration released in 2018 the *Act on Early childhood teachers' Unethical Behaviors* (Ministry of Education, 2018a) and *Ten Principles for Professionalism of Early Childhood Teachers in the New Era* (Ministry of Education, 2018b), laying the groundwork for formal quality standards when recruiting early childhood teachers.

In training, the educational administration played a formal role in curriculum-related decision-making and influenced teachers through training programs. For both pre- and in-service early childhood teachers, China's educational administration had established and enforced national standards about teacher training that aligned with curriculum reforms. In this regard, early childhood teachers as a group did not have a formal role in curricular decision-making that undergirds such training. In the pre-service training, a minimum educational background and a minimum professional qualification were stipulated to be met by pre-service teachers before they started their teaching career. Mandated by *China's Law for Teachers* (National People's Congress, 1993), pre-service teachers must complete lower secondary or vocational early childhood education training before starting work with children aged 3–7 years. The teaching certification was seen as the minimum professional qualification for early childhood teachers (Xinhua Net, 2018). As for the in-service training, the educational administration delivered it through a system established at the provincial, municipal, and county levels in collaboration with local kindergartens. This in-service training led teachers to periodically exchange information and learn from each other through a network of activities including field visits, peer observation, competitions, collaborative projects, and workshops on best practices and innovative teaching methods (Zhao, 2012).

Apart from its merits, recent research unveiled at least three problems with the current teacher training system. First, the minimum standards established decades ago for teachers in pre- and in-service training needed to be enhanced. Considering that higher

education has nearly become universal in China, the minimum education qualification required for early childhood teachers needs to be lifted to attract qualified candidates (Chi & Li, 2019; Wang et al., 2014). Second, in-service training opportunities were in shortage. While the educational administration had established a national training plan for in-service early childhood teachers (Ministry of Education, 2011b), there were regional disparities. According to recent survey findings from the Dongguan City of Guangdong Province, the majority (around 75%) of the teachers did not think they had been provided with enough chances for training (Liu, 2020a). Third, the quality of the training services was in doubt. Some teachers asserted that the training courses did not help them practice what they had learned in the classroom settings (Liu, 2020a). It appeared that there was much room for the educational administration's further improvement in teacher training service provision, concerning the dynamics involved in curriculum reforms.

In allocation, similarly, the educational administration retained the final authority throughout actions or decisions to systemize and streamline resources in the preparation of early childhood teachers for curriculum reforms. There was a huge gap between China's urban and rural areas in both the quantity and quality of early childhood teachers, which can affect the consistency of the delivery of curriculum reform across the nation. Bridging this gap and ensuring consistency in the regional alignment with the mandates of curricular decisions remained a pledge of the educational administration in China. In terms of quantity, while China's rural areas witnessed a huge increase in the number of kindergartens, around 4000 rural towns across China still did not have a public kindergarten, and the gross enrollment rate in some areas remained below 50% in the early childhood stage (Chen, 2019). The low enrollment rate could be partly attributed to the shortage of kindergarten facilities and early childhood teachers. This shortage was exacerbated by the lack of willingness among most college graduates or new teachers to teach in rural areas (Wu & Qin, 2015). Additionally, insufficient government resources and support for kindergartens in these regions contributed to the problem (Kidwai et al., 2016).

As for the quality of teachers, it was normally difficult to ensure the quality of early childhood teachers in rural areas plagued by teacher shortages (Chen, 2016; Tang & Wu, 2018). According to a survey of 600 rural early childhood teachers, for example, only around 30% of them had received relevant training in early childhood education, 22% completed advanced education beyond the 2- or 3-year technical college training specialized in early childhood education, and the majority had completed technical secondary school only (Yang & Wang, 2017). In contrast, according to a survey of 300 early childhood teachers from a city, the majority (accounting for 75.8%) had completed the two- or three-year technical college, four-year university, or above (Zhang, 2020).

Moreover, there was a gap between private and public kindergartens. Private kindergartens in general were suffering from a shortage of qualified teachers, as the proportion of teachers having not been certified to teach was much larger than in public ones (Liang et al., 2014; Wang et al., 2014). Albeit with a vision to transform private kindergartens into service-driven ones at affordable prices to the common people, the educational administration had not yet established a complete set of policies and financial support systems for improving teachers' qualifications in private kindergartens (Liu, 2020b).

In retention, the educational administration reserved the final approval of decisions that affect a curriculum reform, instead of teachers. A poor retention rate suggests a lack of stability of the teacher workforce and hence low viability of a new curricular mission. The retention of early childhood teachers was not promising in China, which can hold back curriculum reform. Not many research articles had been published on teacher retention until 2010, and there was less literature on the urban–rural gap in the retention of teachers (Li & Gong, 2019). Results from the following two surveys were noteworthy. One survey on 121 teachers from a city in Henan Province reported that 46.8% of the early childhood teachers had shifted their jobs (He, 2013). The other on 649 early childhood teachers from four provinces reported that 23.6% of the surveyed teachers had planned to work in a different kindergarten, and 24.1% had planned to shift their jobs (Du et al., 2013). These statistics demonstrated bleak circumstances when it came to retaining early childhood teachers.

Existing research pointed out several factors that might explain the retention issues. First, there was a salary gap both between kindergartens (e.g., private vs. private kindergartens, urban vs. rural kindergartens) and between education levels. The between-kindergarten salary difference was found associated with the mobility of teachers from one kindergarten to another, and the between-profession salary difference was found associated with teachers' shift to a new profession (Du et al., 2013). For instance, early childhood teachers' salaries were lower than primary or secondary school teachers, and this disparity aroused broad dissatisfaction among early childhood teachers (Liang et al., 2014). Second, China's staff quota system established by the educational administration limited the remunerations to certain teachers. This system mandated the maximum number of teachers each kindergarten could be hired with government-supported job security and other benefits (Xia, 2014). That was to say, in-service early childhood teachers were not treated equally as many of them did not have the same job security or the equivalent remunerations as their peers that were already in this quota system. By the end of 2018, the teachers in this quota system accounted for 46% of the total number of teachers in public kindergartens across China (Chen, 2019), although this proportion was much lower than that in the past once up to 72% (Zhang, 2010). The in-service early childhood teachers were more likely to shift their workplace or profession in search of better opportunities (Zhang, 2016a, 2016b).

## Discussion

In China, early childhood teachers now hold more influential roles than in the recent past, but there is still room for improvement, as seen in many other countries. In this review, we delved deep into the situation of early childhood teachers amidst China's curriculum reforms. We discovered that China's early childhood teachers directly influence curriculum reforms, notably by shaping the curriculum through their teaching practices. This finding contradicts Cao (2020), who suggested that Chinese early childhood teachers had minimal involvement in designing instructional content and methods. Specifically, we found that early childhood teachers advise on establishing curricular goals, hold final authority over teaching goals, and play a key role in selecting textbooks and class content. In terms of instructional methods, teachers have the final say in the methods

used in classroom teaching. However, due to limited available information, we could not comment on their roles in examinations.

Despite their impact, early childhood teachers in China face certain limitations that could be addressed with more support from the educational administration. They lack a formal role in setting educational goals, which are typically established through national guidelines. Additionally, factors like educational administration decisions and societal expectations influence instructional content selection. Moreover, limitations in teachers' knowledge, experience, or attitudes may hinder their full contribution to curriculum reforms. In a top-down system, educational administration could invest more in teacher training to enhance their capacity and contribution. Regarding policies for training, recruiting, allocating, and retaining teachers, the administration, holding final authority, could take more responsibility to address institutional or system-wide issues and empower early childhood teachers.

This review has some limitations. It focuses on existing research on the relatively stable status quo of China's early childhood education, excluding rapidly changing factors like the private sector's role in early childhood teacher training. Additionally, although parental expectations significantly influence early childhood curriculum reforms, this review lacks extensive coverage due to limited literature on the topic. Future research on teachers' roles in curriculum reforms could explore various directions. Studying how social beliefs influence early childhood curriculum reforms and teachers' roles, as well as the impact of parents and private companies on teacher training and education, would provide a more comprehensive understanding of reform dynamics. Furthermore, despite substantial governmental investment in training millions of early childhood teachers, surveys reveal that many teachers do not implement what they have learned or agreed upon in practice. Investigating the effectiveness of government-led teacher training programs and identifying ways to improve them would be valuable for enhancing early childhood education quality.

#### Abbreviations

UNESCO	The United Nations Educational, Scientific and Cultural Organization
CCP	Central Government of People's Republic of China
UNESCO-IBE	International Bureau of Education, The United Nations Educational, Scientific and Cultural Organization
UNESCO-UIS	UNESCO Institute for Statistics

#### Glossary

Curriculum	Curriculum refers to the planned learning experiences and instructional materials provided by an educational institution or organization. It encompasses the subjects, courses, content, teaching methods, and assessment strategies designed to facilitate learning and achieve educational goals. Curriculum development involves determining what knowledge, skills, and values should be taught, organizing the content into coherent sequences, and selecting appropriate instructional methods and resources.
Early Childhood Education (ECE)	Early Childhood Education (ECE) refers to the educational programs and practices designed for children from birth to around eight years old (typically until they enter primary school). ECE aims to provide young children with a nurturing and stimulating environment that supports their physical, cognitive, social, and emotional development. It often includes activities and experiences that promote language development, literacy, numeracy, creativity, problem-solving, social skills, and self-regulation. ECE programs may be offered in various settings, such as preschools, kindergartens, childcare centers, and home-based settings.

#### Teachers at the Early Childhood Stage

Teachers at the early childhood stage refer to educators who work with young children in early childhood education settings, such as pre-schools, kindergartens, and childcare centers. They play a crucial role in facilitating children's learning and development during the formative years. These teachers typically possess specialized knowledge and skills in child development, early childhood education principles and practices, and effective teaching strategies for young children. Their responsibilities may include planning and implementing developmentally appropriate curriculum and activities, fostering positive relationships with children and families, assessing children's progress, and creating a supportive and inclusive learning environment.

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#### Author contributions

DC established the framework for guiding the literature review, analyzed the selected literature, synthesized key evidence, and wrote the first draft of this article. YC provided generous revisions to integrate reviewers' suggested changes in the writing. JC provided generous suggestions about how to improve the article, including recommending citations to strengthen key claims and options to improve the logic and structure of the writing.

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#### Declarations

##### Competing interests

The authors report that there are no competing interests to declare.

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