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Curriculum Hybridization and Cultural Glocalization: A Scoping Review of International Research on Early Childhood Curriculum in China and Singapore

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Abstract

Purpose: This article presents a scoping review of the internationally published research on the early childhood curriculum (ECC) reforms, policies, measures, and effectiveness in China and Singapore, to explore the joint and interactive effects of globalization and localization in ECC in two different contexts.

Design/Approach/Methods: We reviewed and analyzed the chosen studies with a multilevel curriculum framework: formal curriculum, perceived curriculum, operational curriculum, and curriculum ideology.

Findings: The synthesis of evidence indicated that in both China and Singapore (1) a constructivist orientation is relied upon to construct the formal curricula; (2) the perceived curricula have been

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heavily influenced by the indigenous values and contextual realities; and (3) the Western ideology embedded in the formal curricula has not been realized, as reflected in the operational curricula. **Originality/Value:** The phenomenon of curriculum hybridization has been scrutinized to explain these findings regarding curriculum ideologies and practices. As confirmed by the findings and theoretical explanations, the 3CAPs framework (culturally, contextually, and child-individually appropriate practices) can be employed to guide the development of ECC in policies and practices.

Keywords

China, cultural glocalization, curriculum hybridization, early childhood curriculum, Singapore

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Globalization of education has driven most countries toward the same set of ideas, discourses, values, and ideologies about early childhood curriculum (ECC), education, and quality. China and Singapore are no exception. Since the turn of this millennium, the two countries have launched large-scale national reforms to thoroughly transform their preschool and K-12 curricula, intending to make them more "globalized" or "Americanized" (Li et al., 2012). One might assume that such large-scale reforms should have been based on the scientific, sound, and supportive evidence generated from the local pilot or implementation studies. However, this kind of taken-for-granted assumption has not been tested by a systematic analysis of the policymaking and implementation in China and Singapore. This means, if this assumption could not be confirmed, one has a strong reason to challenge the intention, rationality, and rigorousness of these national reforms. This article presents a scoping review of international research on ECC reforms and practices in China and Singapore to fill this gap. This review aims to provide empirical evidence and analysis about the intention, rationality, implementation, and effectiveness of ECC reforms to address the knowledge gaps and provide insights into the ongoing reforms in the two contexts.

China and Singapore: An ideal pair of contrasts

China runs the world's largest early childhood education (ECE) system, serving children aged 0–6 or 7 years. China's ECE institutions include (1) nurseries for children aged 0–3 years, (2) kindergartens for children aged 3–6, and (3) pre-primary classes for children aged 5–6 or 7 (Feng, 2017). The Chinese government has implemented a large-scale ECC reform since the launch of a new set of ECE guidelines in 2001. During the past two decades, especially since 2010, the Chinese government has endeavored to provide accessible and high-quality ECE to all children regardless of their ethnic and socioeconomic backgrounds. The launch and implementation of two national

ECC policies, the *Guidelines for Kindergarten Education (Trial Version)* (Chinese Ministry of Education, 2001) and the *Early Learning and Development Guidelines for Children Aged 3 to 6 Years* (Chinese Ministry of Education, 2012), is a key component of this quality ECE plan in China. Five domains of learning and development are covered, including health, language, social development, sciences, and arts.

Singapore is the only overseas society primarily composed of a Chinese population (76% of the Singaporean citizen population) (Singapore Department of Statistics et al., 2020). It has two types of ECE services: childcare centers and kindergartens. Childcare centers provide long-day care and education for children from 18 months to 6 years old, while kindergartens provide half-day education to 4- and 5-year-olds (ECDA, 2013a). Since 2003, Singapore Ministry of Education (MOE) has tried to implement child-centered and play-based pedagogy (Tan, 2017) and published a framework for a kindergarten curriculum in Singapore entitled "Nurturing Early Learners (NEL)," which was refreshed in 2012 (Singapore Ministry of Education, 2012). In 2013, the *Early Years Development Framework for Child Care Centres* was also published (ECDA, 2013b), when the Early Childhood Development Agency (ECDA) was officially launched to regulate and prioritize the quality of ECE and related development resources (ECDA, 2013a). The new curriculum policies have promoted a shift from academic instruction to children's hands-on learning, focusing on developing their learning dispositions (Nyland & Ng, 2016). And this paradigm shift was started in 1999 but was only officially launched by Singapore Ministry of Education in 2003 (Nyland & Ng, 2016).

China and Singapore provide an ideal comparison for understanding how the globalization of ECC has been implemented in a society with the same Chinese heritage culture but different social systems. First, both countries have launched their recent ECC reforms since the turn of the new millennium to upgrade the provision of ECE services (Yang & Li, 2019b; Yang, Li et al., 2021, Yang, Peh et al., 2021). Second, although being a multiethnic and multicultural society, Singapore shares the Chinese Confucian culture due to Chinese Singaporeans constituting over 70% of the Singaporean population (Mah et al., 2021). Third, China belongs to the Global South, which corresponds with the developing countries and the Eastern world. In contrast, Singapore is a member of the Global North and is closely related to the more developed Western world. Examining the commonalities and distinctions between China and Singapore will help understand the mechanism of ECC reforms and changes that happened to practices. Therefore, investigating the cases of China and Singapore would allow us to explore the joint and interactive effects of globalization and localization in ECC and to understand the phenomenon of "glocalization" in different Chinese contexts.

Three-level curriculum framework and five schools of philosophy

Curriculum can be defined in various ways, such as a *plan* for achieving learning goals, students' learning *experiences*, and subject matter or learning *content* (Ornstein & Hunkins, 2018). Li (2007)

also identified some other definitions of curriculum, such as "curriculum as expected learning *outcomes*" and "curriculum as an *autobiography* co-constructed by teachers and students." In this article, we define ECC as the intentions and practices of early childhood professionals that influence children's learning experiences and outcomes. The series of intentions and practices include planned goals, learning content, materials, procedures, and assessments organized by administrators and teachers.

Due to globalization, various Western curricular approaches and models have been widely imported and implemented in Chinese kindergartens, such as the Montessori Method, the Project Approach, Reggio Emilia, and HighScope (Zhu & Zhang, 2008). However, the debate on cultural appropriateness of imported curricula, the criticism toward the progressive curriculum reform, the contradictions between policy and practice, the demonstrated belief–practice gap, and the call for Chinese characteristics in ECE practices have altogether pointed to a common concern shared by Chinese early childhood professionals—culture. To unpack the cultural effects on curriculum, a three-level framework is employed in this study to analyze the curriculum change. As studies might examine various aspects regarding curriculum, it is reasonable to conduct our analysis based on the three-level framework (Figure 1)—formal curriculum, perceived curriculum, and operational curriculum (OC) (Goodlad et al., 1979). The perceived and operational curricula are also combined and regarded as the implemented curriculum (Goodlad et al., 1979; Yang & Li, 2018b).

This scoping review aims to delineate the cultural thread, which runs through ECC in China and Singapore, from three interrelated levels: the formal curriculum, perceived curriculum, and OC. We then analyze the ideologies underlying these intended and implemented curricula. In this study, we further define the various types of curricula as follows (Hajer & Norén, 2017):

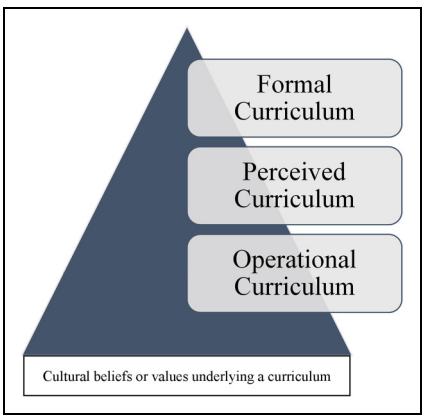

Figure 1. Three-level framework for analyzing curriculum policies and practices.

1. *Formal curriculum*—the intentions as written in curriculum documents such as policies;
2. *Perceived curriculum*—the curriculum as interpreted by practitioners such as teachers;
3. *Operational curriculum*—the curriculum-in-action as reflected in the authentic process of teaching and learning;
4. *Curriculum ideology*—the ideal curriculum that refers to the beliefs or values underlying a curriculum.

Most curriculum studies did not examine the curriculum ideology due to its invisibility. However, ideology plays a vital role in shaping curriculum at various levels (Yang & Li, 2018b). According to Ornstein and Hunkins (2018), the major philosophies underlying educational reforms include idealism, realism, pragmatism, existentialism, and postmodernism.

1. Idealists advocate that ideas are the only true reality and that truth and values are absolute and universal. Therefore, curriculum should be knowledge based and subject based.
2. Realists propose that reality is found in the physical world we live in and that knowledge is gained through sensation and abstraction. Accordingly, good curriculum models should also be knowledge based and subject based.
3. Pragmatists argue that reality is always changing and is dependent on what we observe and experience. Knowledge and values are neither permanent nor absolute but changing over time and contexts. Therefore, there will be no best knowledge; instead, there should be pragmatically appropriate ones that promote problem-solving abilities.
4. Existentialists reject universal and absolute ideas and hold that reality is constructed by the individual. The knowledge that one needs to pursue is the knowledge about the human condition and the personal choices one makes (Ornstein & Hunkins, 2018).
5. Finally, postmodernists disagree with the "universal truth," usually constructed by "the white male" in European-American societies. Postmodernism promotes multiple realities, multiple truths, and uncertainties and rejects the existence of objective and eternal knowledge.

These five schools of philosophy will be adopted in this study to analyze and discuss the ECC reforms in China and Singapore.

The present study

Different authors (e.g., Birbili & Hedges, 2021; Spodek & Saracho, 1996; Yang & Li, 2020; Yang et al., 2022) stress the importance of cultures for shaping curriculum policies and practices in ECE. However, the embedded cultural structures that regulate ECE still lack investigation and

understanding, especially when we only measure individual traits, process norms, and child outcomes to explain early learning experiences. Therefore, it is worthwhile to synthesize the emerging body of research literature on ECC reforms and innovations and analyze it with the theoretical framework for curriculum analysis and comparison to get a clearer picture of how ECC evolves in China and Singapore. We aim to relate existing empirical evidence to a theoretical discussion of "glocalization" underlying ECC reforms and practices in the present synthesis. The following questions guided this study:

1. How are the *formal*, *perceived*, and *operational* curricula of early years in China and Singapore depicted in current research?
2. What are the philosophies underlying the ECC reforms in China and Singapore?
3. How did culture shape ECC in China and Singapore in the last two decades (2000–2020), as reflected in the research literature?

Method

Literature search

To address the research questions, we searched for peer-reviewed scholarly literature that focuses on ECC-related issues in China and Singapore through four international databases[1] of Web of Science, ERIC, ProQuest, and Scopus from January 1, 2000, to December 31, 2020. We conducted the last search in January 2021. ECC could be presented in an integrated or domain-specific way (e.g., literacy, physical education, etc.). We only included literature that focuses on children aged from 0 to 6 years. We selected this age range because early childhood services in China and Singapore are mainly targeted at children younger than six years, right before entering primary schools. After extensive piloting, the following terms with two Boolean operators (AND and OR) and the truncation character (*) were used to search for relevant literature: (curricul*) AND (preschool* OR preschool* OR kindergarten* OR young child* OR early childhood OR early years OR early education) AND (China OR Chinese OR Singapore*).

Inclusion and exclusion criteria

The first author decided on the inclusion of a paper based on two screening steps: first, reading the title and abstract of the paper, and second, reading the whole paper. The second author audited the search and selection processes to ensure that the inclusion of papers was non-biased and comprehensive. The inclusion criteria are:

1. Included articles are peer-reviewed full texts;

2. The articles should report on ECC-related issues (with reference to the framework developed by Goodlad et al., 1979) in China and/or Singapore; and
3. The articles should report findings or make arguments based on evidence-based research.

We excluded those articles that merely reported on Hong Kong SAR's ECC-related issues (e.g., Hui et al., 2015; Wu & Rao, 2011) since this review is interested in ECC in the Chinese mainland, which has a different political system from Hong Kong SAR's (Yang et al., 2017). In addition, articles with a focus that was not covered in Goodlad et al.'s (1979) curriculum framework were also excluded, such as studies reporting on the building of digital resources (Zhou et al., 2009) and external interventions (e.g., Bai et al., 2020; Sullivan & Bers, 2018).

As shown in Figure 2, of the 544 records identified from the four databases, 411 records were excluded by title and abstract. Altogether 64 duplicates were further excluded; the remaining 69 records were downloaded and closely read through for evaluation. We excluded 27 articles based on the exclusion criteria, resulting in 42 articles for our analysis. Among the 42 eligible articles, 26 had China as the research context and 14 had Singapore as the research context. The other two articles had both China and Singapore as the contexts.

Analysis

Due to the variance of methodologies and types of research included in this scoping review, we mainly conducted a qualitative analysis of the included articles. First, we presented the descriptive information of included articles to show the basic research trends (e.g., specific topics, conceptualizations, theories, methodologies, and age range) and key scholars. In the basic description, we also divided the articles into four categories based on the theoretical framework: formal curriculum, perceived curriculum, OC, and others.[2] Second, we extracted and summarized the key findings related to the three-level framework and presented them in the three sub-sections of Findings. As a scoping review (Munn et al., 2018), our analyses aimed to determine the coverage of a body of literature on ECC in China and Singapore and report on the available evidence that addresses and informs ECC reforms and practices in the two comparable contexts. Finally, yet importantly, we interpreted the results with the major philosophies underlying the curriculum, including idealism, realism, pragmatism, existentialism, and postmodernism (Ornstein & Hunkins, 2018). We considered China's and Singapore's ECC reforms as two cases in the global education movements and conducted both within- and cross-case analyses and interpretations. Our interpretation and discussion further inform future research, theory building, policymaking, and practice improvement in the field of ECC.

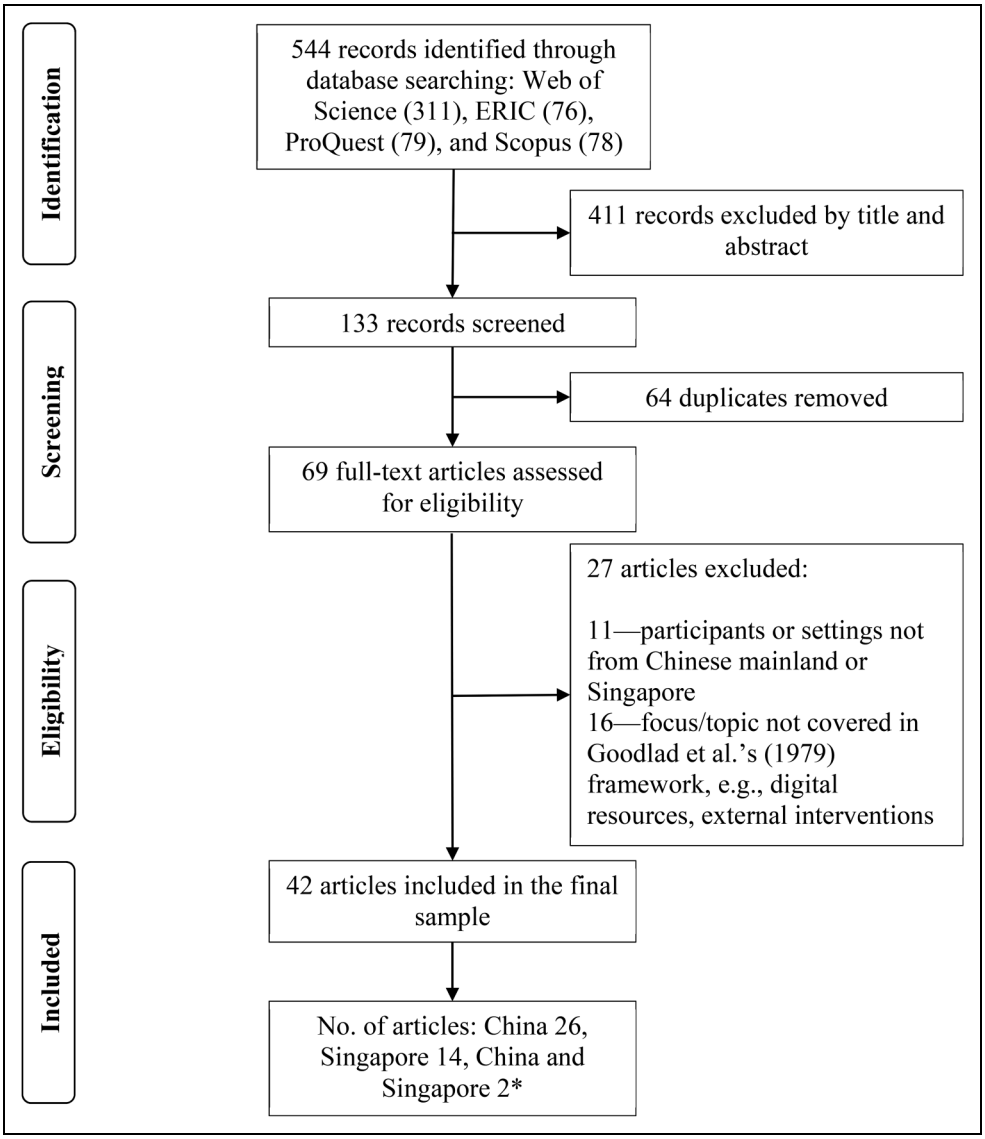

Figure 2. PRISMA diagram of included articles in the research synthesis.

Note. *Two studies had both China and Singapore as the research contexts.

Findings

Table 1 tabulates the authors, country, topic/domain, theory, the conceptualization of ECC, the age range of the focal ECC, and methodology used, which are resulted from the qualitative analysis of included articles. We also identified which curriculum levels (e.g., formal, perceived, and operational) have been involved in the research and labeled each article accordingly.

Table 1. Overview of the characteristics of the reviewed articles.

Authors	Country	Topic/Domain	Category[a]	Theoretical framework	Conceptualization of ECC	Age range of the focal ECC	Methodology
Li and Rao (2005)	China and Singapore	Literacy	PC, OC	None	What is taught and how it is taught in early childhood settings	2–5 years	Child assessment, questionnaire survey, and classroom observation
Yang et al. (2022)	China and Singapore[b]	Curriculum framework	FC	Sociocultural–historical theories	The legislated discourse of quality early childhood teaching and learning	3–6 years	Qualitative discourse analysis
Oberhuemer (2005)	China[c]	Curriculum framework	FC	None	Learning aims, theoretical orientation, learning areas, approaches to assessment, and preparation for formal schooling	3–6 years	Document analysis
Tang and Maxwell (2007)	China	Curriculum implementation	PC, OC	None	Teachers' teaching and children's learning in early childhood settings	3–6 years	Classroom observation, teacher interviews, and parent questionnaires
Pan and Liu (2008)	China	Curriculum implementation	OC	None	Teaching model and quality	3–6 years	Questionnaire, interview, and observation
Wang et al. (2008)	China[d]	Curriculum beliefs	PC	DAP	Instructional practices in early childhood settings	3–6 years	Teacher questionnaires and teacher interviews
Miyahara and Meyers (2008)	China[e]	Curriculum framework	FC	None	Early learning and development standards	3–6 years	Document analysis and background introduction
Li et al. (2011)	China	Literacy	PC, OC	None	Interpretation and implementation of curriculum reform objectives in early childhood teaching practice	4–6 years	Classroom observations, teacher interviews, and teacher questionnaires
Jolley and Zhang (2012)	China	Arts	FC, PC	None	How to teach arts	3–6 years	Teacher interview and document analysis
Hu and Roberts (2013)	China	Quality	OC	None	Operational procedures and instructional practices in early childhood settings	3–6 years	Teacher and administrator interviews, classroom observations, and document analysis
Hu et al. (2014)	China	Math	OC	None	The content and procedure that support teachers and are put into practice by teachers in early childhood settings	3–6 years	Classroom observation, teacher interview, and document analysis
Fees et al. (2014)	China	Curriculum beliefs	PC	None	Teaching philosophies and practices in early childhood settings	3–6 years	Focus group interviews with teachers and administrators
Hammer and He (2016)	China[f]	Science	PC, OC	The concepts of "pedagogical framing" and "pedagogical interactions"	The learning environment and the specific teaching and learning behaviors in early childhood settings	3–6 years	Videotaped observations and video-cued teacher interviews
Li et al. (2015)	China[g]	Math	OC	DAP	The content, teaching sequences, and approaches in early childhood settings	3–6 years	Survey questionnaire

(continued)

Table 1. (continued)

Authors	Country	Topic/Domain	Category[a]	Theoretical framework	Conceptualization of ECC	Age range of the focal ECC	Methodology
Li and Chen (2017)	China	Curriculum reform	FC	Cultural relativism versus cultural universalism	Early childhood teaching guidelines and their implementation	3–6 years	Literature review
Li et al. (2018)	China	Math	PC	None	The content, teaching sequences, and approaches in early childhood settings	3–6 years	Video-cued teacher interviews
Hu et al. (2017)	China	Math	OC	DAP	The content and procedure that are put into practice by teachers in early childhood settings	3–6 years	Videotaped classroom observations and teacher interviews
Wang and Lam (2017)	China	Play-based curriculum	PC, OC	Typology of play, postcolonial theory, and indigenization	How early childhood teachers perceive and enact education models in their everyday teaching	3–6 years	Teacher interviews and classroom observations
Luo et al. (2017)	China	Social–emotional	PC, OC	Pyramid Model for Promoting Social Emotional Competence in Infants and Young Children	Early childhood educational goals and how to teach to achieve these goals	3–6 years	Classroom observation and questionnaire survey
Yang and Li (2018a)	China	School-based curriculum	OC	Sociocultural theory, model of school-based curriculum development, and the ecological systems theory	A series of events that can support young children to learn particular knowledge, skills, and values	3–6 years	Interviews, observations, and document analysis
Yang and Li (2018b)	China[h]	School-based curriculum	PC, OC	A multilevel analytic framework of curriculum	A series of events that can support young children to learn particular knowledge, skills, and values	3–6 years	Interviews, observations, and document analysis
Yang and Li (2019a, 2019b)	China	School-based curriculum	OC	Cultural–historical approach	A series of events that can support young children to learn particular knowledge, skills, and values	3–6 years	Interviews, observations, and document analysis
Hamilton et al. (2019)	China[i]	Arts	FC	Foucault's critical governmentality	A series of planned events regarding what and how young children should learn	5–6 years	Document analysis
Huang et al. (2019)	China	Pedagogical interaction, literacy	OC	None	Teachers' and young children's behavioral and verbal engagement in a learning environment	3–6 years	Classroom observations, questionnaires, and teacher interviews
Yang (2019)	China	Curriculum leadership	PC, OC	The planning, experimentation, and reflection (PER) model, cultural–historical activity theory (CHAT)	The core task in preschool education and successful leadership—teaching and learning	3–6 years	Leader interviews, classroom observations, and document analysis
Luo et al. (2020)	China	Social–emotional	PC	None	The implementation of classroom-based educational programs for young children	3–6 years	Questionnaire survey
	China	Play	PC, OC	Cultural–historical approach	The conceptualization and	3–6 years	Interview and observation

(continued)

Table 1. (continued)

Authors	Country	Topic/Domain	Category[a]	Theoretical framework	Conceptualization of ECC	Age range of the focal ECC	Methodology
Fleer and Li (2020)					implementation of educational programs in early childhood settings		
Hu et al. (2022)	China	Quality	OC	DAP	Operational procedures and instructional practices in early childhood settings	3–6 years	Teacher survey and quality evaluation using rating scales
Ebbeck et al. (2014)	Singapore	Curriculum assessment	OC, Others	None	Planning, implementing, and assessing children's learning as individuals and in a group	18 months–3 years	Teacher research and documentation
Ng (2014)	Singapore	Children's lived experience in the curriculum reform	OC, Others	None	Classroom activities for children in the context of policy change	3–6 years	Qualitative case study
Hussain (2018)	Singapore	Physically active play (PAP)	PC	Complexity theory	PAP curriculum as a playful context incorporated with the physical rigor	0–4 years	Teacher research and theoretical analysis
Tang (2015)	Singapore	Literacy	PC	None	The provision of learning activities through planning and influencing the environment, selecting materials, and using teaching strategies	3–6 years	Grounded theory approach (teacher interviews, classroom observations, and documents)
Bautista et al. (2016)	Singapore	Learning areas for holistic education	PC	None	The provision of holistic learning and development through academic and non-academic areas	4-–5 years	Online questionnaire survey
Nyland and Ng (2016)	Singapore[j]	Teachers' experience in the curriculum reform	PC, Others	None	Children's and teachers' experiences in early childhood settings	3–6 years	Teacher interviews
Bautista et al. (2018)	Singapore	Arts	OC	None	Pedagogical tools and strategies in preschools, as related to arts education	4–5 years	Classroom observations
Ng and Bull (2018)	Singapore	Social–emotional	OC	None	Pedagogical context, tools, and strategies in preschools, as related to social–emotional learning	4–5 years	Classroom observations
Kim and Kim (2017)	Singapore[k]	Arts	FC	None	The rationales, general aims, sequences, content (knowledge), methods, and assessment for early childhood learning	3–6 years	Document analysis
Bautista et al. (2020)	Singapore	Physical education (Gross motor)	OC	None	Where, what, and how preschool educators teach	4–5 years	Classroom observations
	Singapore	Outdoor play	PC	None			Questionnaire survey

(continued)

Table 1. (continued)

Authors	Country	Topic/Domain	Category[a]	Theoretical framework	Conceptualization of ECC	Age range of the focal ECC	Methodology
Ebbeck et al. (2019)					Open-ended and self-directed play in the outdoor environment	18 months–6 years	
Bautista et al. (2019)	Singapore	Learning center time	OC	Cultural–historical activity theory	The early childhood setting where (play-based) learning happens	4–5 years	Classroom observations
Bautista et al. (2021)[l]	Singapore	Curriculum frameworks	FC	Postcolonial theory	Notions, pedagogical practices, and quality standards advocated for early childhood programs	3–6 years	Bibliographic review and theoretical analysis
Yin et al. (2020)	Singapore	Classroom dialogue, literacy	OC	Sociocultural theory, social model of thinking	Ways of teaching, learning, and verbal exchange in early childhood settings	4–6 years	Classroom observations, teacher interviews

Note. FC = formal curriculum; PC = perceived curriculum; OC = operational curriculum.
[a]Category refers to which levels of curriculum have been involved in the research reported by a particular article.
[b]Australia and New Zealand are also included in Yang et al.'s (2022) study.
[c]Nine other countries are also included in Oberhuemer's (2005) study.
[d]U.S. is also included in Wang et al.'s (2008) study.
[e]Seven other countries are also included in Miyahara and Meyers's (2008) analysis.
[f]Norway is also included in Hammer and He's (2016) study.
[g]U.S. is also included in Li et al.'s (2015) study.
[h]Hong Kong SAR is also included in Yang and Li's (2018b) study.
[i]Australia is also included in Hamilton et al.'s (2019) study.
[j]Australia is also included in Nyland and Ng's (2016) study.
[k]Korea, Norway, New Zealand, and Slovakia are also included in Kim and Kim's (2017) study.
[l]Bautista et al.'s (2021) study was published online in 2020.

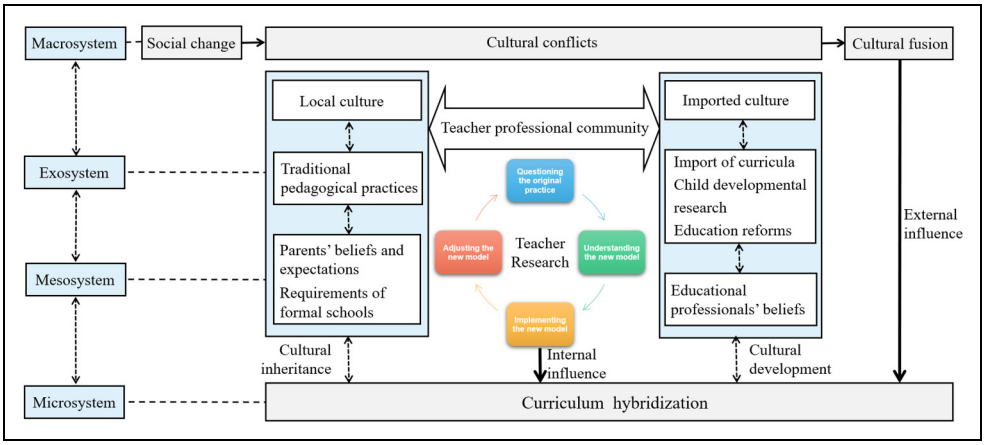

Figure 3. The model of curriculum hybridization.
Note. This figure is adapted from Yang (2021, p. 24).

As shown in Table 1, regarding the domains in which ECC is examined, we found five studies on literacy (e.g., Li & Rao, 2005; Tang, 2015), four studies on math (e.g., Hu et al., 2014; Li et al., 2015), four studies on arts (e.g., Bautista et al., 2018; Hamilton et al., 2019), three studies on social–emotional development (e.g., Luo et al., 2020; Ng & Bull, 2018), two studies on physical development (e.g., Hussain, 2018), and one study on science (i.e., Hammer & He, 2016). In addition, in terms of the research topic, curriculum framework (four studies), school-based curriculum (three studies), play (three studies), and curriculum beliefs (two studies) have been highlighted.

A total of nine studies have examined the formal curriculum (17.0%), with 19 studies on the perceived curriculum (35.8%) and 25 studies on the OC (47.2%). A total of 23 (54.8%) out of 42 studies did not use any theoretical framework. Only 4 (9.5%) out of 42 studies were related to the age range of 0–3 years, while 40 (95.2%) out of 42 studies were related to ECC for 3- to 6-year-olds. With regards to the methods used for examining ECC in China and Singapore, the most commonly used methods include interviews (21 [50.0%] out of 42 studies), observations (17 [40.5%]), document analysis (13 [31.0%]), and questionnaires (12 [28.6%]). Below, we detail the key findings regarding the *formal*, *perceived*, and *operational* curricula in China and Singapore, respectively. The systematic review of these findings will enable our analysis and interpretation of ECC's cultural effects in these two contexts.

Formal curriculum

China. The interaction between local and global cultural forces has shaped the monumental transformations in the centennial history of ECC in China (Li & Chen, 2017), resulting in a competency-based curriculum framework that overlooks subject content and ecological contexts.

De-schoolification (去小学化) has become the main feature of the formal curriculum in China. For instance, research confirms that the Beijing curriculum guide prohibits teaching literacy (e.g., recognizing and writing Chinese characters) in kindergartens. The intention is to avoid age-inappropriate education practices in preschool and avoid the potential negative long-term effects of early rote learning (Li & Rao, 2005). Instead of emphasizing any content knowledge, China has created a separate field for "approaches to learning" or "learning dispositions," promoting the cultivation of children's curiosity, active participation, perseverance, and risk-taking (Miyahara & Meyers, 2008). Competency-oriented learning has become evident as a replacement for more traditional subject-based teaching. For instance, Jolley and Zhang (2012) analyzed the new arts curriculum policy and found that it focused on children's joyful art experiences and the free expression of feelings and thoughts. However, the new arts curriculum lacked clear ecological considerations such as the school, community, intercultural, and electronic contexts (Hamilton et al., 2019).

A follow-up analysis of the *perceived* and *operational* curricula in Chinese kindergartens after the top-down and centralized policymaking will allow us to better understand how the recent ECC reforms have been implemented in China in the era of globalization.

Singapore. Singapore's ECC framework is strongly influenced by Western values, theories, and pedagogies, thus introducing basic notions inconsistent with local cultural values (Bautista et al., 2021). The inconsistencies between imported and local values have further brought challenges to stakeholders involved in the early childhood sector, including administrators, teachers, and parents.

In Singapore's formal curriculum, children are expected to develop key learning dispositions, including perseverance, appreciation, creativity, curiosity, and engagement (Tan, 2017). Purposeful play and quality interaction are emphasized in the formal curriculum to support children's holistic development. Similar to the case of China, the Singapore government has incorporated the international trend of child-centered, competency-based learning into the curriculum framework for young children. For instance, the NEL framework puts arts in the learning area of aesthetics and creative education, emphasizing imagination and creativity (Singapore Ministry of Education, 2012). And children are expected to participate in and enjoy various arts experiences (Kim & Kim, 2017). However, Yang et al. (2022) identified five contextual considerations that deserve attention (pp. 10–11): (1) acknowledge the values of teacher-directed, explicit instruction; (2) recognize the necessity of the pre-academic preparation for young children in preschools to ease their transition to primary schools; (3) concretely illustrate how to enact the idea of "purposeful play" in the classroom; (4) justify how to meet the predetermined learning goals of distinct learning areas via integrated learning; and (5) identify the existing constraints in the wider educational landscape to smoothen the NEL framework's implementation in practice.

Perceived curriculum

China. Due to the curriculum reform, Chinese early childhood educators' beliefs have also changed, reflecting a change from teacher-led, whole-group instruction to child-directed, individualized experiences (Fees et al., 2014). Common themes emerging from Chinese teachers' ECC beliefs include promoting integrated curriculum across domains, valuing social–emotional development, providing hands-on learning experiences, play-based learning, and incorporating self-choice in the curriculum (Hammer & He, 2016; Wang & Lam, 2017). Li et al. (2011) reported that most teachers preferred a child-directed approach (50%) or a balance of teacher- and child-directedness (45%) in literacy-focused instruction.

However, the advantages of teacher-directed, whole-group teaching are still acknowledged by some teachers. These benefits of formal instruction include developing children's collective awareness, such as cooperation and caring for others, which is highly valued in Chinese societies (Tang & Maxwell, 2007). Furthermore, content-based instruction is an effective pedagogy for teaching artistic skills (Jolley & Zhang, 2012). And these benefits of formal instruction are more aligned with parents' high expectations and children's pre-academic preparation for formal schools (Li et al., 2011).

More evidence supports that there is a variety of preferences in the perceived curriculum. Wang et al. (2008) found that teachers' beliefs regarding teacher-directed instruction were more related to the cultivation of children's pre-academic skills. Their beliefs regarding child-directed learning and integrated curriculum were associated with creative and hands-on activities. Even in a particular type of learning activities such as math lessons, as compared to American teachers, Li et al. (2018) found that Chinese teachers believed in a balance between Western pedagogy and indigenous values. The Western pedagogy acknowledged by the Chinese teachers reflects features such as problem-solving, involving every child in natural interaction, and situating math in everyday life. However, they would be more purposeful in conducting the math lessons by giving a clear and specific focus, carefully planning the lesson, using specific steps, and summarizing at the end of a lesson (Li et al., 2018). Fleer and Li (2020) also revealed that rural teachers in China tended to use play as an instructional tool for developing children cognitively, thus balancing child-initiated play and teacher-led instruction.

Singapore. Singaporean teachers' beliefs regarding the ECC were found to conform to the formal curriculum. Tang (2015) found that the participating teachers strongly believed in the value of using developmentally appropriate materials and the child-centered pedagogy, reflecting a paradigm shift of the national early education toward a less academic-focused, teacher-led, but more child-centered curriculum. In a survey study, Tan and Rao (2017) reported that teachers believed in both child-centered and teacher-centered pedagogies, but they have a stronger recognition of

the child-centered approach. Consistently, Ebbeck et al. (2019) found that 91% of teachers valued outdoor play as it could support children's physical and social–emotional development. However, challenges existed, such as the risks of health and safety (e.g., climate, mosquito), limited physical resources, and classroom management difficulty.

However, some teachers insisted that play could not replace subject content or pre-academic learning, especially in the Singapore context where parents have high expectations of children's academic success (Nyland & Ng, 2016). Besides the influence of parental expectations, teachers' perceived curriculum was affected by the access to in-service training and the availability of resources (Ang, 2008). The inadequacy of effective training and resources most likely leads to compromising child-centered, individualized learning in the curriculum, which drives teachers to hold more conservative beliefs. As differentiated in Bautista et al.'s (2016) survey study regarding perceived curriculum, Singaporean teachers with traditional, adult-centered beliefs prioritized academic fields such as numeracy and literacy, while those with progressive, child-centered beliefs prioritized non-academic areas such as social–emotional development.

Operational curriculum

China. An extensive body of evidence reveals a discrepancy between Chinese early childhood teachers' perceived curriculum and the actual curriculum practices. The child-centered, individualized notions and pedagogies are not consistently implemented in classroom practices. For example, Luo et al. (2017) found a small or non-significant relationship between teachers' self-reported and observed social–emotional practices. Li and Rao (2005) also found a gap between teachers' reported and actual classroom practices regarding the early literacy curriculum. They even found that some Chinese kindergartens provided literacy skills training in connection with commercial organizations. In terms of math teaching, Li et al.'s (2015) study revealed a dominance of intentional teaching and age-specific content coverage in the OC. The finding is consistent with Hu et al.'s (2017) observations, which indicated that the actual math teaching failed to provide students with opportunities to understand math as independent learners.

Current practices also lag behind the formal curriculum, which was advocated by the ECE reforms, especially in pedagogical framing and teacher–child interaction (Hammer & He, 2016; Hu et al., 2014; Pan & Liu, 2008). Evidence shows that teacher-led, large-group, or whole-class teaching dominates the curriculum implemented in Chinese kindergartens, relying on textbooks for lesson planning (Huang et al., 2019; Tang & Maxwell, 2007). In Pan and Liu's (2008) survey, observations showed that many kindergarten classrooms preserved whole-class instruction, discipline management, and group activities. Even in those classrooms with higher rated quality, teachers often encouraged children to self-choose activities initially but tended to direct them during the activity (Pan & Liu, 2008). Li et al. (2011) also observed that theme-based, direct

instruction was the most prevailing approach to curriculum implementation in Chinese kindergartens. However, learning-center activities were also promoted to give children more autonomy. Play in Chinese kindergartens was also rule-based and teacher-driven, emphasizing specific learning outcomes (Wang & Lam, 2017).

The dominance of formal teaching seems more evident in rural China, as there is a lack of interactive materials for free play and appropriate textbooks for lesson planning for children in rural areas (Hu & Roberts, 2013). Due to these challenges, children were observed to wander around the classroom aimlessly or keep playing with the same materials during free time (Hu & Roberts, 2013). In addition, Hammer and He (2016) found that the arrangement of curriculum activities has strict time limits, which is also a significant challenge facing teachers. Recent studies confirm that the collective orientation is still valued in the OC, with group instructional activities dominating the daily practices (Fleer & Li, 2020; Hu et al., 2022).

The strict schedule for implementing the curriculum is related to the typical feature of the school-based curriculum in Chinese kindergartens—a fusion of diverse approaches. For example, Yang and Li (2018a, 2019a) reported that Chinese kindergartens tended to borrow and integrate various pedagogical approaches and curriculum models, leading to a school-based curriculum that was comprehensive and sophisticated and restricted teacher autonomy and flexibility regarding curriculum implementation.

Singapore. Classroom observations indicated that Singaporean teachers did not abandon the traditional pedagogy with worksheets (Ng, 2014), which is also called the "drill-and-practice" approach (Li & Rao, 2005). For example, based on the Singapore Kindergarten Impact Project (SKIP), Ng and Bull (2018) found that teachers tended to use intentional teaching in the social–emotional learning area instead of facilitating children's learning with incidental strategies. Regarding implementing the arts curriculum, Bautista et al. (2018) found that teachers mostly conducted outcome-based instruction instead of encouraging creativity and expression as advocated by Singapore Ministry of Education's formal curriculum. Teachers were also more likely to use intentional and explicit teaching strategies in the classroom regarding the learning area of gross motor skills, reflecting the dominance of teacher-led instruction. However, more physical play and unguided activities occurred outdoors (Bautista et al., 2020). Likewise, for Chinese literacy teaching, Yin et al. (2020) found that although children had a high degree of participation in classroom dialog, the teacher–child dialogue was knowledge-driven, teacher-initiated, and teacher-directed.

The rigid schedule, teacher–student ratio, and classroom environment are the constraints that have restricted teachers from fully implementing the formal curriculum (Bautista et al., 2018; Yang, Li et al., 2021, Yang, Peh et al., 2021). In the most child-initiated section of the OC, learning center time, Bautista et al.'s (2019) observational evidence indicated that children had very little

freedom of choice when playing with the materials and were usually required to complete assignments such as worksheets. And the quality of instructional support in the learning center time was low in language modeling and concept development (Bautista et al., 2019), which shows that Singaporean preschool teachers may be unskilled for providing efficient support to children in their self-directed learning activities.

Discussion

The formal curricula in both China and Singapore conceptualize the ideal curriculum as constructivism-based, child-centered and interactional. Despite these dominant Western ideologies in the formal curricula, this systematic review of the evidence (2000–2020) indicated a hybrid of Chinese and Western ideologies in the perceived and operational curricula. The indigenous values and contextual realities have shaped early childhood practitioners' curriculum implementation, which is misaligned with the official, formal curriculum in each context. Below, we will discuss the key findings from the present review, especially the shared features of ECC reforms and practices in China and Singapore.

Curriculum ideologies: From idealism and realism to a hybrid of pragmatism and postmodernism

Formal curricula in both China and Singapore build on the constructivist learning theory, viewing children as capable individuals actively constructing their knowledge of the world. They also synchronously represent the abandon of *idealism* and *realism* as the philosophical underpinnings. Tobin et al. (1991) argued that the notion of Developmentally Appropriate Practice (DAP), which has been used as the basis of the ECC reforms (2000–2020) in both China and Singapore, is based upon individualism rooted in the Western world.

The policymakers and reform planners in China and Singapore are strong believers of Western ideologies, and thus have thoroughly taken the "white-male norms" as the only true reality that should be absolute and universal. They adopted the top-down approach to reform the ECC in both countries by simply transplanting those American ECC ideas and practices, with a faith that these are the best in the world (ideal ones) and should be universally implemented. Unfortunately, the early childhood practitioners in both countries have encountered huge challenges in putting these formal curricula into practice due to an absence of contextual considerations and cultural responsiveness. The bottom-up demands and realistic pressure from the local education systems have resulted in tensions and discrepancies between different levels of the curriculum. For instance, early childhood teachers' reported beliefs and observed practices in curriculum

implementation significantly conflicted with each other (e.g., Li et al., 2012). Although most teachers preferred the child-initiated approaches toward curriculum implementation, they embraced teacher-directed teaching, large-class activities, and homework assignments in the actual classroom practices (e.g., Li et al., 2011). Besides the belief–practice gap, the tension between progressive curriculum policies and conservative curriculum practices has been demonstrated in many studies (e.g., Bautista et al., 2019; Li et al., 2011). Although the policymakers usually overlook parents' demands and expectations, it is worth noting that they have different strategies to cope with this "conflict of interest." In China, the educational authorities have ignored or even suppressed parental needs of pre-academic training by launching the national campaign of "fighting against schoolification." Textbooks, learning packages, literacy, and English teaching are banned in the "De-schoolification" movement. In contrast, Singapore's educational authorities adopt *pragmatism* and allow early learning and teaching of literacy, numeracy, and bilingualism (Li et al., 2012, 2022).

The continual reluctance of removing *idealism*- and *realism*-led practices such as the intentional teaching of content knowledge (or "core knowledge") from the actual curriculum practices in Singapore has shown the need to respect the ecological reality and embrace an inclusive perspective to promote ECC reforms. It is arbitrary to view any philosophical ideologies as superior to others. Reliance upon the developmental perspective tends to exclude local traditions, value systems, and content knowledge on children's learning experiences. In contrast, a cultural perspective is more inclusive for balancing the local and global effects on education (Yang & Li, 2019b). The cultural perspective views curriculum as a cultural practice that reflects social values and expectations through its design and implementation (Deng et al., 2013; Yang, 2018). The cultural perspective allows us to rethink how glocalization as a fusion of globalization and localization can shape ECC, especially in the Eastern world. According to Pragmatism, there are no best ECC models; instead, there is the best-fit one to a certain preschool. According to Postmodernism, there are multiple realities, multiple truths, and multiple answers; thus, ECC should be diversified and contextualized in both countries.

Education reform: From globalization to glocalization

Curriculum hybridization shown in this review can be explained as the meaningful reflection of "cultural glocalization" at the microlevel. Take the case of China as an example. The historical turns of ECC-related policies, which appeared in the past century in China, have been determined by the social and cultural changes rather than educational research or child studies. The major ECC reforms in China's modern history are active or passive responses to social, political, and cultural events situated in a more macro ecosystem (Yu, 2017). Since the first modern Chinese kindergarten was founded in 1903 (Zhu & Wang, 2005), the underlying social and cultural influences were reflected from the major waves of ECC reform (Li & Chen, 2017): the initiation of the New

Cultural Movement, the founding of the People's Republic of China, and the launch of the "reform and opening-up" policy. As reviewed, since the late 1990s, Chinese educational authorities have embraced a more child-focused approach in reforming the original practices (i.e., subject-based teaching) of ECE. Such notions as "play-based learning" and "learning by doing" have been greatly promoted by the policies to transform its original ECC practices into a much more progressive and Western-style model (Li et al., 2011). The influence of globalization has reacted with the local actors and factors, resulting in a mix of educational philosophies (e.g., pragmatism, existentialism, and realism) and the process and outcome of curriculum hybridization in the early childhood sector. The cultural collision and fusion due to glocalization have also been found in the case of Singapore (see a brief review in Yang et al., 2021a, 2021b).

This can be explained with the ecological systems theory (Bronfenbrenner, 1979), which links the process of curriculum hybridization to the interactions among various layers of ecocultural environments (Yang & Li, 2019b). As shown in the model of curriculum hybridization (Figure 3, Yang, 2021, p. 24), cultural influences of the *macrosystem* generally include globalization (imported culture) and local culture, which could explain part of the cultural functions. As for the *exosystem*, several significant items will influence ECC, including the interactive forces from the import of curricular practices, traditional curricular practices, child developmental theories, and educational policies. In addition, the *mesosystem* comprises diverse stakeholders' beliefs toward ECE, including parents' beliefs and expectations, early childhood experts' professional guidance, and requirements of the formal schools. And ECC is positioned in the *microsystem* as a hybrid of curricular models and influences from the outer layers.

Toward culturally, contextually, and child individually appropriate practices (3CAPs)

Both the policy–practice and the belief–practice gaps could be reasonably explained from a cultural perspective. Many of the notions and approaches proposed in policies and advocated by the government are borrowed or transplanted from the Western culture, which is different from the traditional Chinese culture. As no culture could be universally applicable, there would be inevitable conflicts when popular ideas and models are transplanted from a particular social culture to a new context. Therefore, the tensions between local and imported cultures have led to the discrepancies between curriculum reform objectives and the actual curriculum implementation in China and Singapore.

The cultural conflicts were also observed in the research project of "Preschool in Three Cultures." Tobin et al. (1991) investigated the educating and caring practices in Chinese, Japanese, and American preschools. They found that preschools are the social institutions that reflect and impart their cultural values to turn young children into culturally appropriate citizens.

After around twenty years, Tobin et al. (2009) revisited the preschools. They found that Chinese early childhood educators' beliefs and practices were still underpinned by local cultures, even though they were shocked by the government-led progressive educational reform. Contemporary Chinese early childhood teachers had to negotiate the contradictions between the local and global forces to pass traditions on to their younger generations and cope with the new social challenges. Tobin (2011) further concluded that the implicit cultural influence is undervalued and deserves more awareness. It was even proposed that values and practices originated from the local culture could be promoted to mediate the implementation and effects of imported curriculum ideals to avoid cultural colonization in educating young children (Pearson, 2011).

The above philosophical and cultural analysis has supported a need to propose a more inclusive and balanced framework for understanding ECC. This framework is supposed to integrate diverse orientations toward promoting children's learning and development, not only by themselves as human beings but also within the complex and changing sociocultural context. The framework of "3CAPs," namely, culturally, contextually, and child-individually appropriate practices, can be used for understanding and implementing ECC (Li & Chen, 2017). As conceptualized by Nganga et al. (2020), 3CAPs can guide the policymaking and implementation of ECC, with the following principles (p. 2):

1. CAP1—Culturally Appropriate Practice. At this level, any reforms in the early childhood curriculum are made with sensitivity to the child's environment and are not overly dependent on Euro-Western values of best practices.
2. CAP2—Contextually Appropriate Practice. At this level, regional differences are considered, while all the curriculum practices are based on local contexts.
3. CAP3—Child-individually Appropriate Practice. At this level, children's experiences are considered, such as family histories and experiences with immediate environments, including schools.

Theoretically and practically, the 3CAPs as an inclusive framework can guide the development and improvement of curriculum policies and practices to increase ECC's focus, rigor, and coherence. Therefore, both teacher educators and early childhood practitioners (including administrators and teachers) should be trained to support such a foundational framework.

Limitations and future research directions

There are several limitations of our review. First, we have simplified the analytical framework developed by Goodlad et al. (1979), so our inclusion of articles does not cover the *experienced*

curriculum and *learned curriculum*. Future curriculum research regarding children's learning experiences and their learning outcomes is warranted. To our knowledge, there is also a lack of research on the assessment component of ECC. Second, we have only included articles with English as the written language. Chinese literature can be screened and reviewed to extend our efforts in synthesizing ECC-related research evidence. Third, there is a lack of research focusing on sub-cultural diversity within either China or Singapore in the included articles. The impact of sub-cultural diversity on ECC is an important research direction warranting more attention, especially in China. It would be interesting and significant to compare and contrast the ECC policies and practices across the Chinese mainland, Hong Kong SAR, Taiwan region, and Macao SAR. Last but not least, although the present review did not exclude research on the 0–3 curriculum, our search results may be biased to some extent as we did not search key terms such as "0–3," "infants," and "toddlers." In our review, there are only 4 (9.5%) out of 42 studies relating to the age range of 0–3 years, and we have a related observation that 0–3 curriculum has been rarely studied; however, there could be more existing research on the infant–toddler curriculum in China and Singapore. This is an important issue that deserves more attention from the ECE and curriculum research communities.

Conclusion

The synthesis of empirical evidence indicated that a constructivist orientation is relied upon to construct the *formal* curriculum in both China and Singapore. However, the *perceived* curriculum has been heavily influenced by indigenous values and contextual realities. The Western ideologies embedded in the formal curriculum did not come true, as reflected in the OC. The phenomenon of curriculum hybridization has been scrutinized to explain these findings regarding curriculum ideologies and practices. The present review confirms the effect of curriculum hybridization from policy to practice. As Yang et al. (2022) conceptualized, curriculum hybridization is the process of learning from diverse curriculum models and approaches. It extends the theoretical framing of "pedagogical hybridity" (Gupta, 2018, p. 13) to conceptualize the more widely observed phenomenon impacted by the hybrid of influences regarding the interconnection among learning goals, learning content, materials, procedure, and assessments. Future research is warranted to examine how curriculum hybridization may lead to the innovation and improvement of policy-making, teacher education, professional development, and early learning experiences.

Contributorship

Weipeng Yang conducted the research and drafted the manuscript. Hui Li provided important ideas for the research and helped to draft the manuscript. Both authors read and approved the final manuscript.

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Notes

1. We did not include Chinese literature in the present synthesis due to limited time and resources.
2. The category of "Others" may cover those focusing on attained curriculum, such as the assessment of children's learning outcomes from a particular curriculum.

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