

# A Critical Analysis of Education for Sustainability in Early Childhood Curriculum Documents in China and Norway

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## Abstract

**Purpose:** This article examines how early childhood curriculum documents in two culturally different contexts are associated with current concepts of sustainability and principles of early childhood education for sustainability (ECEfS) in China and Norway.

**Design/Approach/Methods:** Applying critical document analysis, the study explores a number of landmark curriculum documents from China and Norway, comparing the ways in which ECEfS is conceptualized, including the concept of sustainability, children as agents of change for sustainability, and sustainability in young children's everyday lives.

**Findings:** Corresponding to the analytical framework, China and Norway attach different importance to the three dimensions of sustainability—social-cultural, economic, and environmental. For example, Norway has a more autonomous view of children's agency, while China

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gives more emphasis to teachers' support. The two countries also have different perspectives on how to work with families and communities based on significantly different traditions and institutions. The comparative document analysis argues that predominant cultural dimensions in each context, such as collectivist and individualistic factors, may shape the understandings of sustainability in each country's early years' curriculum documents.

**Originality/Values:** By broadening the focus on the social-cultural aspects of sustainability, this study extends the development of a culturally inclusive understanding of the concept of sustainability and contextualized/localized approaches to ECEfS across the globe.

### Keywords

Children's agency, China, early childhood curriculum, early childhood education for sustainability (ECEfS), education for sustainable development (ESD), Norway

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## Introduction

Education is key to the global integrated framework of 17 Sustainable Development Goals (SDGs), which has been reaffirmed as a central concern by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2015). However, early childhood education (ECE) has been quite slow at addressing sustainable development (SD) issues and did not play an active role as some other education sectors in developing governmental policies and innovative practices during the United Nations' Decades of Education for Sustainable Development in 2004–2015. Nevertheless, the advocacy by World Organisation for Early Childhood Education (OMEP) has seen the contribution of ECE to a sustainable society highlighted over the years, “as the values, attitudes, behaviours and skills acquired in this period may have a long-lasting impact in later life” (Pramling Samuelsson & Kaga, 2008, p. 9). Furthermore, it is increasingly recognized that ECE could play a significant role “in preparing present and future citizens and in aiding societies to make the necessary transitions to sustainability” (UNESCO, 2014, p. 70). Therefore, the relevance of early childhood education for sustainability (ECEfS) and the call for pedagogically strong ECE in this domain has continued to be articulated, driving more and more efforts focusing on how to deeply investigate the concepts associated with sustainability in early childhood curricula and encourage more innovative practices (Aürlemalm-Hagsér & Davis, 2014; Centre for Environment and Sustainability, 2009; Davis, 2009, 2015; Davis & Elliott, 2014; Weldemariam et al., 2017).

With this in mind, the purpose of this article is to compare two sets of early childhood curricula and related key documents from China and Norway, with respect to three key ideas embedded in ECEfS: (1) the concept of sustainability with three interconnecting pillars; (2) children as agents of

change for sustainability; (3) and sustainability in young children's everyday lives. Furthermore, as key actors for an international cooperation program connecting China and Norway, we expect to better understand the explicit and implicit meanings stated in the curricula, which might help our international team explore further possibilities to initiate better practices in ECEfS across the globe.

Although there is an increasing amount of research emphasizing the importance and implications of ECEfS, there is little—although growing—research about how the concept of sustainability is actually stated in curricula. This article contributes to emerging comparative curriculum document analyses about concepts related to ECEfS and further understanding and implications across cultures.

## Literature review

### *Introduction to contexts and curriculum documents in ECE in China and Norway*

*China.* In mainland China, preschools are called “you er yuan” (幼儿园), which literally means “kindergarten” in Chinese, usually referring to full-day programs serving children aged 3–6 years with a focus on education and care. Since a landmark policy of universal preschool for all in 2010, the landscape of ECE has been tremendously altered and continuing to evolve through many policy innovations (Li et al., 2017).

In terms of curriculum policies, there are three key documents. The first is the *Kindergarten Work Regulations* (hereafter referred to as the *KWGs 2016*), newly revised from the 1996 version and implemented from March 2016 (Ministry of Education of the People's Republic of China [MOE], 2016), as a mandatory framework for all registered kindergartens. The *KWGs 2016* includes 11 sections with 66 articles in relation to key operation issues, comprising safety, education and care, hygiene, equipment and facility, workforce, funding, the relationship of kindergarten, family and community, and organization and management.

The second relevant curriculum document is the *Kindergarten Education Guidelines* (hereafter referred to as the *KEGs 2001*), issued in July 2001 (MOE, 2001), that acts as a working framework for quality kindergarten education. The *KEGs 2001* consists of four parts, focusing on general principles, objectives and content, organization and implementation, and assessment.

The third document is the *Early Learning and Development Guidelines* for children aged 3–6 years (hereafter referred to as the *ELDGs 2012*) released in October 2012 (MOE, 2012). The *ELDGs 2012* sets reasonable and age-appropriate expectations and goals for children in five learning and developmental domains: health, language and early literacy, social development, science and mathematics, and the arts.

Recently, China has also advocated for more contributions to green development to balance economic growth with environmental protection, embracing SD as a major concern in the

contemporary era. Thus, China has also become more active in education for sustainable development (ESD). For example, the most recently elected government has targeted SD as a national priority with significant strategies for this (Zhou et al., 2016). However, very little curriculum development in ECE has touched on issues of ESD (Feng, 1998; Liu & Liu, 2008; Zhou, 2012; Zhou et al., 2016), let alone pedagogically strong ECEfS in Chinese preschools. More research and practice efforts need to be concentrated on such issues.

*Norway.* There are two key early childhood curriculum documents to be targeted in relation to Norway and SD. The first is the Act No. 64 of June 2005 relating to Kindergartens (hereafter referred to as the *Kindergarten Act 2005*), serving as a statutory scheme for kindergarten work (Ministry of Education and Research, 2005). The *Kindergarten Act 2005* has worked as a protection for access to kindergarten as a universal right for all Norwegian children, providing clear regulations for the roles and tasks of kindergartens and kindergarten authorities.

The second relevant document is the *Framework Plan for Kindergartens* (hereafter referred to as the *FPKs 2017*), newly revised and implemented from August 2017 (Ministry of Education and Research, 2017). The *FPKs 2017* covers nine key sections: core values, roles and responsibilities, objectives and content, children's participation, cooperation between home and kindergarten, transitions, kindergarten as a pedagogical undertaking, working methods, and learning areas.

As a pioneer in SD, Norway has been famous for its long and strong traditions in encouraging ESD and its practices from early on (Heggen, 2016). The former version of the *FPKs* endorsed "understanding of sustainable development shall be promoted in everyday life" (Ministry of Education and Research, 2006, p. 7), and the newly revised version officially mandated SD as one of the core values for ECE (Ministry of Education and Research, 2017). To some extent, Norway has played a vanguard role in the Nordic countries, and beyond. As a result, Sweden followed this policy in the following year. Such a concept of SD now has been regarded as one of the fundamental values in the newly updated National Curriculum for the Preschool (Skolverket, 2018).

### *Literature on curriculum document analysis related to ECEfS*

Although the discourses of ESD have changed over time with an ebb and flow of national and international foci, there are some overlapping and contrasting frames in terms of curriculum document analysis about ECEfS. For example, Weldemariam et al. (2017) compared early childhood curriculum in Australia, England, Norway, Sweden, and the USA, to investigate four aspects of their curricula: sustainability presence, views of the child, human–environment relationship, and philosophical/theoretical underpinnings. Kim (2016) also adopted a critical document analysis approach to examine how early childhood curriculum documents in South Korean and Australian

contexts are aligned with current concepts of sustainability and ECEfS principles, including three components: the concept of sustainability in relation to the three pillars of SD, children as agents of change for sustainability, and sustainability in young children's everyday lives. Aürlemalm-Hagsér and Davis (2014) applied a critical theory lens and document analysis to look for four key elements in the Australian and Swedish early childhood curricula: inclusion of concepts of sustainability, recognition of human's place in nature and environmental stewardship, critical thinking for sustainability, and references to children as active participants for change. Additionally, Jóhannesson, Norðdahl, Óskarsdóttir, Pálsdóttir, and Pétursdóttir's research (2011) explored how the curricula from preschools to upper secondary level in Iceland dealt with issues of education for sustainability, focusing on seven characteristics: values, opinions, and emotions about nature and environment; knowledge contributing to a sensible use of nature; welfare and public health; democracy, participation, and action competence; equality and multicultural issues; global awareness; and finally, economic development and future prospects.

All these relevant comparative document analysis frames have chosen some similar analytic perspectives: the concept of sustainability, the image of children as active learners, and their potential as agents for change. Furthermore, a sociocultural approach to human development has been commonly accepted as a more inclusive way to understand early childhood and curriculum (Edwards, 2003; Rogoff, 2003). The New Zealand early childhood curriculum, *Te Whāriki*, has a sociocultural emphasis (New Zealand Ministry of Education, 1996), which has been included in the in-depth discussions in the main articles. Collectively, these research papers inspired this article's own analytical framework.

To sum up, this research aimed to analyze and compare the current national curriculum documents in early childhood in China and Norway and to articulate how these documents represent ECEfS. Specifically, the objectives of this analysis related to the following research questions:

- Is the concept of SD/sustainability explicitly and implicitly used in Chinese and Norwegian early childhood curriculum documents? If so, how?
- How, and in what ways, is the notion of children as active participants for change represented in the Chinese and Norwegian early childhood curriculum documents?
- How, and in what ways, is the notion of sustainability in young children's everyday lives reflected in related documents?

## Methodology

This study is content analysis using collaborative inquiry, conducted in 2016–2017. The two lead authors, as key actors in an international partnership program for ESD in ECE in China and Norway, discussed how to select comparable curriculum documents and then arrived at the

analytical framework for the study through literature review and group discussion. They then worked closely with two research assistants, one from China and one from Norway, to implement the investigation of Chinese and Norwegian early childhood curricula. One research assistant also visited the Western Norway University of Applied Sciences and worked with one of the lead authors for 1 month to refine the coding scheme and arrive at a final consensus on coding. The analysis of the Chinese early childhood curriculum documents was conducted similarly.

It is important to note that the two Norwegian documents have official English versions, while all three of the Chinese documents are not available in English officially. However, as the lead author from China has a Chinese ethnic background—a professionally experienced translator, and a proficient writer in English of academic publications, she worked closely with the research assistants to ensure that all translations were clearly delivered.

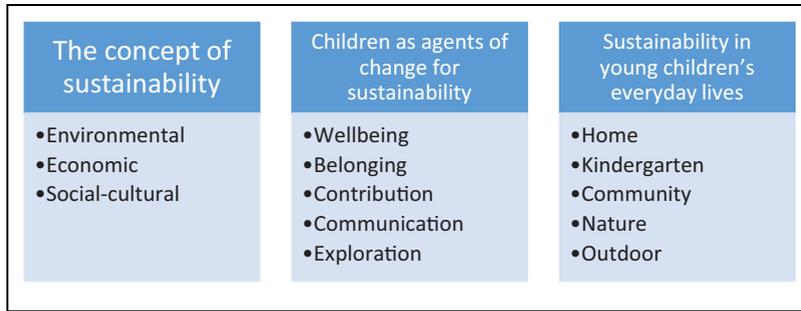
### *The analytical framework*

As noted, the structure of our analytical framework, adapted from Kim (2016), Aürlemalm-Hagsér and Davis (2014), and Weldemariam et al. (2017), used the three key curricula themes described below.

*Theme 1: The concept of sustainability.* Even though there is no single point of origin of this three-pillar conception, but rather a gradual emergence from United Nations' reports and academic literature (Purvis et al., 2019), the concept of sustainability has been commonly regarded as having three interconnected pillars or dimensions: environmental, economic, and social-cultural. Using Kim's study as a model (2016), each dimension was then broken down into further illustrative terms, then used as thematic keywords for coding.

*Theme 2: Children as agents of change for sustainability.* In terms of children's agency for creating change, this is a concept that has been highly recommended and well documented in ECEfS studies (Davis, 2015; Davis & Elliott, 2014; Hägglund & Pramling Samuelsson, 2009). It draws on both critical theory as an approach that emphasizes transformation, and also Sociology of Childhood perspectives that place children's capabilities at the forefront. Additionally, from post-structural perspectives, building children's complex relationships through curriculum illuminates children's subjectivities and exploring curriculum as milieus of belonging/being/becoming (Sellers, 2013) is a worthy purpose. Thus, this analytic theme adopted the five strands of the New Zealand early childhood curriculum document, *Te Whāriki* (New Zealand Ministry of Education, 1996, 2017): well-being, belonging, contribution, communication, and exploration.

*Theme 3: Sustainability in young children's everyday lives.* This theme took the five dimensions used by Kim (2016) to aid the analysis: home, kindergarten, community, nature, and outdoors. This



**Figure 1.** Analytical framework for ECEfS in curriculum documents. ECEfS: early childhood education for sustainability.

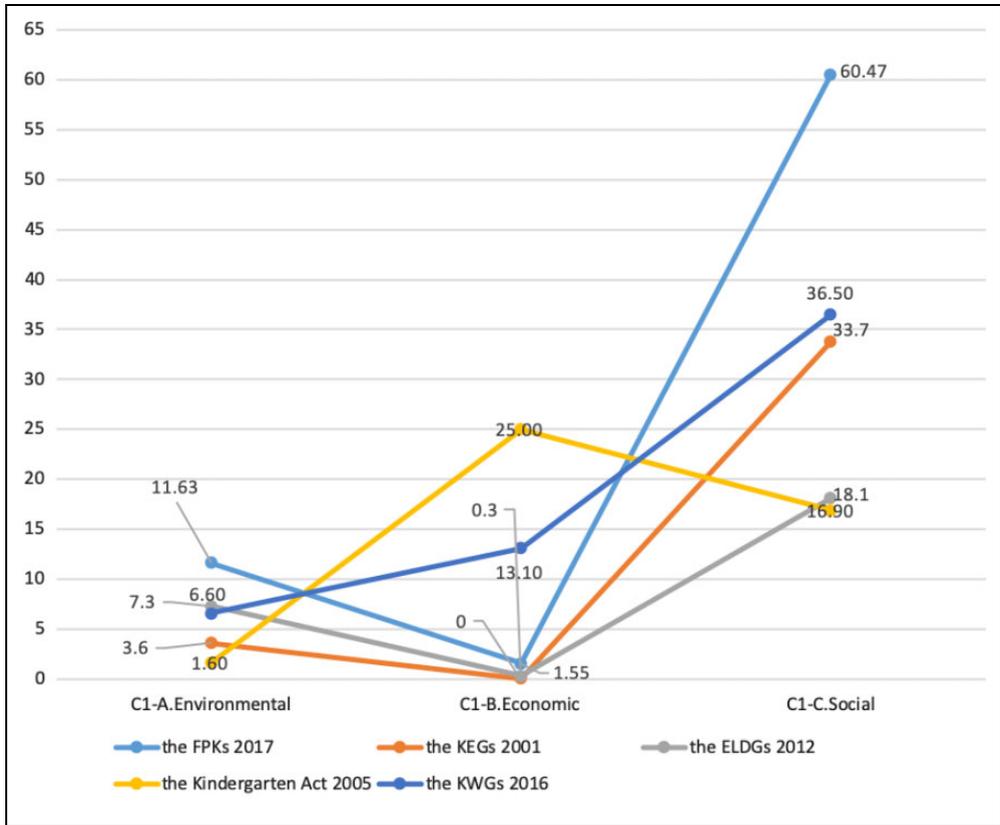
consideration originated from academic literature (Barratt et al., 2014; Elliott, 2014; Heggen, 2016; Zhou et al., 2016) that emphasizes the importance of sustainability as an everyday practice, and it also considered to highlight some promising practices in ECEfS that are emerging in these two countries.

### *Data collection and analysis*

A fundamental problem in comparative studies is how to address the issue of comparability. Only objects that meet the same function (or role) may be meaningfully compared with each other (Farrell, 1979). Therefore, it may be reasonable and reliable for a cross-cultural comparison to be grounded on functional equivalency between the constructs. Wirth and Kolb (2012) proposed that scholars offer qualitative discussions of functional equivalence based on explorations of a concept's dimensions, theoretical considerations, additional information, and additional expert advice.

In considering the functional equivalency, the two sets of curriculum documents were the major data resources used in this research. In terms of the legal frameworks for ECE curriculum, the *KWGs 2016*, with 137 sentences, from China corresponds with the curriculum document from Norway, the *Kindergarten Act 2005*, with 124 sentences. As to the curriculum guidelines, the *KEGs 2001*, with 83 sentences, from China aligns with its counterpart from Norway, the *FPKs 2017*, with 129 sentences. Additionally, this research also recruited the updated curriculum documents from China, the *ELDGs 2012*, with 331 sentences.

We analyzed the data by reading and coding, sentence by sentence, within the three concepts and dimensions of each concept (see Figure 1). Firstly, we identified key terms and main ideas relevant to the 13 dimensions based on academic literature and local practices: a concept of sustainability with three pillars; children as agents of change for sustainability with five keywords; and sustainability in young children's everyday lives with five key terms. Secondly, we read carefully and thoroughly all of the 804 sentences and calculated how many statements in the

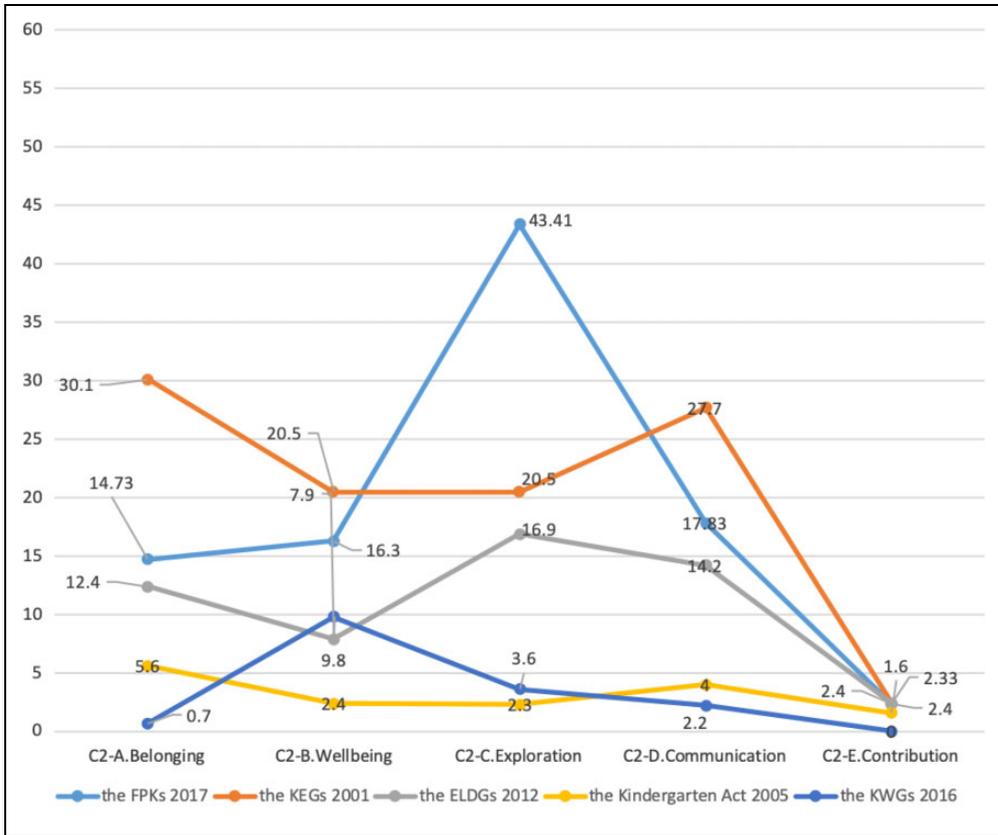


**Figure 2.** The percentage of concept of sustainability within curriculum documents.

curriculum documents represent sustainability concepts and principles within the three concepts and dimensions of each concept (see Figures 2 to 4). Thirdly, we looked back over the documents and, by group discussions, attempted to figure out the “true” nature of the meanings we were investigating, both explicitly and implicitly.

### *Research validity and generalizability*

As qualitative researchers, we define ourselves as being insiders–outsiders in this comparative research, but also move beyond a strict outsider/insider dichotomy to emphasize the relative nature of researchers’ identities and social positions, as dependent on our specific research contexts. The two leading researchers have rich experiences in comparative research in both Chinese and Norwegian cultures, as well as in wider international contexts. Thus, these researchers were able to play both roles as insiders and outsiders, and, at times, were able to figure out some roles that were in-between. We feel these capabilities are valuable because this study did not have any ambition to overgeneralize its research results, but to contribute to



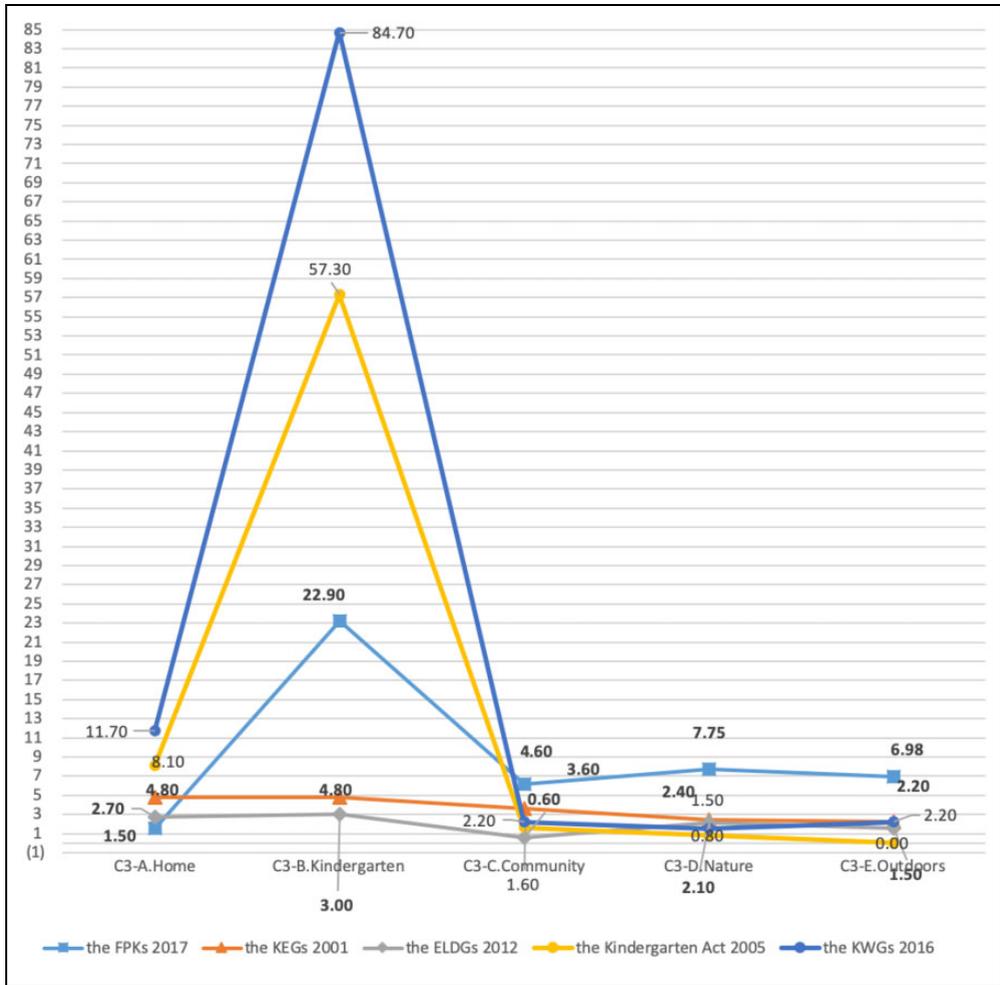
**Figure 3.** Percentage of representations of children as agents of change for sustainability within the curriculum documents.

better understandings and mutual respect for ECEfS in different cultures, also to an in-between space for seeking to be more inclusive, collaborative, participatory, reflexive, and nuanced (Crossley et al., 2016).

## Findings

### *The concept of sustainability with three pillars*

As a result of the content analysis, a general picture about sustainability emerged. For example, the *FPKs 2017* from Norway compared to the *ELDGs 2012* and the *KEGs 2001* from China, showed a stronger understanding and commitment to addressing the environmental (11.63%) and social-cultural (60.47%) dimensions of sustainability. However, the *Kindergarten Act 2005* from Norway, with higher percentage of presence of sustainability than that of the *KWGs 2016* from China in the dimension of economic aspects (25% and 13.1%, respectively). Further, as time has gone by, the environmental and social-cultural dimensions have become more and more visible and important



**Figure 4.** The percentage of notion of sustainability in young children’s everyday lives within curriculum documents.

in both countries’ curricula; however, there remains limited attention to the economic dimension of SD in these curriculum frameworks (see Figure 2).

There are some significant differences inside the texts, however. Firstly, in the environmental dimension, China prefers to the sustainable use of nature and care for nature, at the same time. For example, in China’s *KWGs 2016*, it emphasizes that “kindergartens need to use environment as an important resource” in Article 30 (MOE, 2016). Norway, on the other hand, respects nature and proposes enjoyment of nature and living with nature in a sustainable way as one of fundamental values. The *ELDGs 2012* states, for example, “...begin to understand the close relationship between human beings and nature, and know to respect and cherish the life, and protect the

environment” (MOE, 2012). Also, at the beginning of the Norwegian *FPKs 2017*, it reaffirms the basic principles “Section 1 of the *Kindergarten Act* states that kindergartens shall build on fundamental values in the Christian and humanist traditions such as respect for human dignity and nature” (Ministry of Education and Research, 2017, p. 7).

Secondly, with reference to the social-cultural dimension of SD, China’s documents express many concerns about children’s health and hygiene. Norway’s document, on the other hand, pays more attention to equity, democracy, diversity, and social justice, rooted in its social pedagogy tradition and social democracy model. To some extent, China documents pay more attention to personal well-being, while Norway documents focus more on society’s well-being.

Thirdly, regarding the economic dimension, as to the institutional and legal framework, Norway has stood for sustainable economics with a balanced system of public and nonprofit kindergartens. However, in terms of its detailed curriculum guidelines, China shows more details about “saving water and electricity” in the *ELDGs 2012* (MOE, 2012), which recognizes greater significance of economically sustainable life styles in the challenge of growing consumerism.

### *Children as agents of change for sustainability*

Based on the line chart (see Figure 3), the Norwegian *FPKs 2017* strongly argues for children’s exploration (with the highest percentage of 43.41) within a lived cultural and historical belief in outdoor free play and risky play in all weather. The Norwegian *FPKs 2017* also attaches greater importance to children’s belonging, well-being, and communication. Risky play might be seen as a good way to promote related ideas. One of the new elements in the *FPKs 2017*, compared to the previous document, laid an even stronger emphasis on the importance of risky play. “By engaging with the human body, food and health, kindergartens shall help the children to...(…)...evaluate and master risky play through physical challenges.” And the “staff shall...(…)...be proactive and present, support and challenge the children to engage in physical play and acknowledge their achievements” (Ministry of Education and Research, 2017, pp. 49–50).

In the Chinese *KEGs 2001* and the *ELDGs 2012*, the content appears to have a similar attitude to children’s belonging, well-being, exploration, and communication. But it is interesting to find that both countries’ documents did not register highly in the dimension of children’s contribution to sustainability (see Figure 3).

However, there are two quite different images of children’s agency illustrated in the two different texts and contexts. In the Norwegian curriculum documents, when it comes to representations of children and childhood, these mandate that “Kindergartens shall respect and safeguard the intrinsic value of childhood” (Ministry of Education and Research, 2017, p. 8). Furthermore, teachers’ roles are mainly about *supporting* child-centeredness, autonomy, and leadership. In the Chinese counterparts, teachers play much more active and *leading* roles in supporting children’s

all-around development. Especially in the *KEGs 2001*, it provides a number of goals for children in the five learning domains, and there is explicit detailed information about what teachers should do to achieve these goals. In this regard, Chinese discourses about children and childhood have changed dramatically from the *ELDGs 2012*, as the newer curriculum document underlines the following principles: (1) pay attention to the development of the whole child, (2) respect children's individuality, (3) understand young children's learning processes, and (4) comprehend the importance of how children approach learning (MOE, 2012).

### *Sustainability in young children's everyday lives*

Analysis of both sets of national curriculum documents (see Figure 4) identify strong appreciation of the importance of kindergarten to bring sustainability in young children's everyday lives, especially the *Kindergarten Act 2005* and the *KWGs 2016* as mandatory frameworks for kindergarten work (84.7% and 57.3%, respectively). However, the two countries illustrate different perspectives to working with families and communities, based on their different cultures, traditions, and institutions. In the Norwegian *Kindergarten Act 2005*, there is a separate Section 4 related to parents' councils and coordinating committees, ensuring that important matters are submitted to parents' councils and the coordinating committees (Ministry of Education and Research, 2005). In the updated Chinese *KWGs 2016*, there is also a separate Chapter 9 dedicated to kindergarten, family, and community partnership, in order to ensure that parents' councils are under the supervision of principals and kindergartens' support for the local community in parenting and childcare service (MOE, 2012). Since partnership building as a critical success component of whole-school sustainability approaches (Henderson & Tilbury, 2004), family, kindergarten, and community partnerships are parts of preconditions for sustainability, and the importance of goal-linked family, school, and community engagement for sustainability in young children's everyday lives needs further attention.

With regards to everyday practices, kindergartens are still seen as centered living spaces for young children's everyday lives. However, the newer Norwegian *FPKs 2017*, compared to the Chinese *KEGs 2001* and the *ELDGs 2012*, puts a higher premium on community, nature, and outdoors, underscoring the importance of Nordic social pedagogy and deep connectedness with nature. In China, the central focus on kindergartens and the outdoors time seems to relate more to safety issues impacting on vulnerable children.

In summary, based on the content analysis of the most recent ECE curriculum documents, China and Norway attach different degrees of importance to the three dimensions of sustainability. Norway's documents illustrate a more autonomous notion of children's agency where children are encouraged to be leaders, while the Chinese curricula give more emphasis to teachers' moving toward the idea of child-centeredness. The two countries' documents also reveal different

perspectives related to kindergartens' working with families and communities, based on their different cultures, traditions, and institutions. Overall, this analysis suggests that these national ECE curriculum documents and contexts create different pathways to ECEfS.

## **Ways forward for China and Norway**

This article has examined differences and similarities between two national early childhood curriculum documents, from China and Norway, in order to better understand the positions of each national curriculum in relation to SD, and to advocate further for education for sustainability.

Curriculum frameworks play an integral role in offering practitioners guidance and mandate for initiatives such as education for sustainability. Further, they have the potential to support key stakeholders in academic, policy, and professional worlds to explore concepts and practices such as ECEfS. Pinar (2011, 2012) defined a dynamic understanding of curriculum as complicated conversations, complex questions, and dynamic working practices, drawing on multiple narratives and perspectives with personal, historical, social, cultural, postcolonial, political, and ethical considerations. In ECE, New Zealand's *Te Whāriki* offers a broad view of curriculum, "taking it to include all the experiences, activities and events, both direct and indirect, that occur within the ECE setting" (New Zealand Ministry of Education, 2017, p. 7). We concur with such a generalized curriculum view, and support the notion of curriculum roots having diversified origins and traditions that inform diverse practices, both locally and globally. With this in mind, here are three recommendations arising from this cross-country review of curriculum, based on each of the three key themes developed for this cross-national curriculum analysis.

### *Understanding cultural roles in shaping the concept of sustainability*

Sustainability is a dynamic concept, with different nations providing their own unique philosophical, historical, and social foundations to understand and manipulate ideas associated with sustainability (Inoue, 2014). While it seems that China and Norway have significant differences in terms of sustainability, especially in human–environment relationships, and social-cultural associations, nevertheless, they do share some similar ideologies about sustainability. Deep ecologists have emphasized Taoist values that have relevance to environmental theory (Naess, 1986/1995), and Daoism as a "green religion" could aid humanity's search for sustainable futures (Miller, 2017). When China reconsiders how to learn more from its traditions and cultures, ECEfS could thrive in this vast nation with contemporary, creative adaptations. All the research documents considered in this study have reminded us to be sensitive and deeply respectful of other points of view in order to learn from these and to educate ourselves.

### ***Supporting more powerful children's images and agency in learning and play***

This study has reinforced some international consensus that children can be active learners and competent citizens, in the here-and-now, who have the competence to be agents of change for sustainability. Here, we draw on the *Te Whāriki* curriculum document with its vision of children who are: *competent and confident learners and communicators, healthy in mind, body and spirit, secure in their sense of belonging and in the knowledge that they make a valued contribution to society* (New Zealand Ministry of Education, 2017, p. 6). This curriculum offers views of children that are inspiring for other national curricula in ECE.

However, it is also possible to explore alternatives to ECEfS that, to date, have not been widely discussed in current Western literature. One such alternative is Anji Play, located in Anji County where a place and a material (bamboo) come together to reinforce thinking on sustainability in rural China (Flynn et al., 2017). Anji Play is firmly rooted in a strong commitment to promoting eco-civilization, and it is described as an ecology of learning, that has five principles: love, risk, joy, engagement, and reflection (Coffino & Bailey, 2019). Since Anji Play is famous for preparing children to be resilient through play, it is being practiced in public early childhood programs in all of China's 34 provinces and administrative regions. Furthermore, a feature of Anji Play is the construction of children's working theories. As Wood and Hedges (2016) have argued, contemporary policy frameworks that seek to develop working theories could frame up an alternative or solution to addressing the continuing struggle between curriculum theory and practice. In children's stories of Anji Play, working theories flourish inside children's learning and play. To some extent, Anji Play has played an important role in advocating for children's agency and children as active learners in the here and now, which made it an alternative solution to ECEfS in China and beyond.

### ***Fostering a whole community approach to sustainability in children's everyday lives***

Fostering a whole community approach to sustainability is aimed at creating sustainable communities, which require all individuals, families, social and political structures, and all organizations to have the knowledge, skills, values, capacity, and motivation to respond to the complex sustainability issues encountered in everyday life. This must be contextual and relevant to children, families, and communities' own particular social and political milieu.

This study has shown that curriculum needs to be linked to each nation's histories and priorities. As a consequence, emerging international ECEfS policy and practice cannot be a one-size-fits-all approach. Variety and diversity must be respected, and indeed, embraced. As the United Nations' Agenda 2030 suggests, global partnerships are essential for a sustainable future for all (United Nations, 2015). Therefore, comparative research and international cooperation such as that

described in this article should be further advanced in order to nourish deeper global understanding and local action plans for ECEfS into the future.

### **Declaration of conflicting interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Ethical approval**

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institution and/or National Research Committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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### **References**

- Ärlemalm-Hagsér, E., & Davis, J. (2014). Examining the rhetoric: A comparison of how sustainability and young children's participation and agency are framed in Australian and Swedish early childhood education curricula. *Contemporary Issues in Early Childhood, 15*, 231–244.
- Barratt, R., Barratt Hacking, E., & Pat, B. (2014). Innovative approaches to early childhood education for sustainability case studies from the field. In J. Davis & S. Elliot (Eds.), *Research in early childhood education for sustainability international perspectives and provocations* (pp. 225–247). Routledge.
- Centre for Environment and Sustainability (GMV). (2009). *Gothenburg recommendations on education for sustainable development*. Chalmers University of Technology/University of Gothenburg. Retrieved from <https://www.chalmers.se/sv/om-chalmers/miljo-och-hallbar-utveckling/tidig-satsning-pa-miljo-och-hallbarhet/Documents/Goteborgsrekommendationerna.pdf>
- Coffino, J. R., & Bailey, C. (2019). The Anji Play ecology of early learning. *Childhood Education, 95*, 3–9. <https://doi.org/10.1080/00094056.2019.1565743>
- Crossley, M., Arthur, L., & McNess, E. (Eds.). (2016). *Revisiting insider-outsider research in comparative and international education*. Symposium Books.
- Davis, J. (2009). Revealing the research “hole” of early childhood education for sustainability: A preliminary survey of the literature. *Environmental Education Research, 15*, 227–241.
- Davis, J. M. (2015). What is early childhood education for sustainability and why does it matter? In J. M. Davis (Ed.), *Young children and the environment: Early education for sustainability* (pp. 7–31). Cambridge University Press.
- Davis, J., & Elliott, S. (Eds.). (2014). *Research in early childhood education for sustainability: International perspectives and provocations*. Routledge.
- Edwards, S. (2003). New directions: Charting the paths for the role of sociocultural theory in early childhood education and curriculum. *Contemporary Issues in Early Childhood, 4*, 251–266.

- Elliott, S. (2014). *Sustainability and the early years learning framework*. Pademelon Press.
- Farrell, J. (1979). The necessity of comparisons in the study of education: The salience of science and the problem of comparability. *Comparative Education Review*, 23, 255–261.
- Feng, X. (1998). New research topic: Sustainable development [in Chinese]. *Early Childhood Education*, 10, 4–5.
- Flynn, A., Chan, K. W., Zhu, Z., & Yu, L. (2017). Sustainability, space and supply chains: The role of bamboo in Anji County, China. *Journal of Rural Studies*, 49, 128–139.
- Hägglund, S., & Pramling Samuelsson, I. (2009). Early childhood education and learning for sustainable development and citizenship. *International Journal of Early Childhood*, 41, 49–63.
- Heggen, M. P. (2016). Education for sustainable development in Norway. In J. Siraj-Blatchford, C. Mogharreban, & E. Park (Eds.), *International research on education for sustainable development in early childhood* (pp. 91–102). Springer.
- Henderson, K., & Tilbury, D. (2004). *Whole-school approaches to sustainability: An international review of sustainable school programs*. Report Prepared by the Australian Research Institute in Education for Sustainability (ARIES) for The Department of the Environment and Heritage, Australian Government.
- Inoue, M. (2014). Perspectives on early childhood environmental education in Japan. In J. Davis & S. Elliott (Eds.), *Research in early childhood education for sustainability: International perspectives and provocations* (pp. 79–96). Routledge.
- Jóhannesson, I. Á., Norðdahl, K., Óskarsdóttir, G, Pálsdóttir, A, & Pétursdóttir, B. (2011). Curriculum analysis and education for sustainable development in Iceland. *Environmental Education Research*, 17, 375–391. <https://doi.org/10.1080/13504622.2010.545872>
- Kim, S. (2016). A comparative study of early childhood curriculum documents focused on education for sustainability in South Korea and Australia (Masters by Research thesis, Queensland University of Technology). Retrieved from [https://eprints.qut.edu.au/94087/1/Soyoung\\_Kim\\_Thesis.pdf](https://eprints.qut.edu.au/94087/1/Soyoung_Kim_Thesis.pdf)
- Li, M., Liu, L., & Fan, X. (2017). Is China pre-primary teacher workforce ready for a big jump in enrolment? In M. Li, J. Fox, & S. Grieshaber (Eds.), *Contemporary issues and challenge in early childhood education in the Asia-Pacific Region* (pp. 259–273). Springer.
- Liu, Y., & Liu, F. (2008). Building a harmonious society and ECE for sustainable development. In I. Pramling Samuelsson & Y. Kaga (Eds.), *The contribution of early childhood education to a sustainable society* (pp. 43–52). UNESCO. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000159355>
- Miller, J. (2017). *China's green religion: Daoism and the quest for a sustainable future*. Columbia University Press.
- Ministry of Education of the People's Republic of China. (2001). *Kindergarten education guidelines* [in Chinese]. Retrieved from [http://old.moe.gov.cn/publicfiles/business/htmlfiles/moe/moe\\_309/200412/1506.html](http://old.moe.gov.cn/publicfiles/business/htmlfiles/moe/moe_309/200412/1506.html)
- Ministry of Education of the People's Republic of China. (2012). *Early learning and development guidelines for children aged 3 to 6* [in Chinese]. Retrieved from [http://www.moe.gov.cn/srcsite/A06/s3327/201210/t20121009\\_143254.html](http://www.moe.gov.cn/srcsite/A06/s3327/201210/t20121009_143254.html)
- Ministry of Education of the People's Republic of China. (2016). *Kindergarten work regulations* [in Chinese]. Retrieved from [http://www.moe.gov.cn/srcsite/A02/s5911/moe\\_621/201602/t20160229\\_231184.html](http://www.moe.gov.cn/srcsite/A02/s5911/moe_621/201602/t20160229_231184.html)
- Ministry of Education and Research. (2005). *The kindergarten act*. The Norwegian Ministry of Education and Research. Retrieved from [https://www.regjeringen.no/globalassets/upload/kd/vedlegg/barnehager/engelsk/act\\_no\\_64\\_of\\_june\\_2005\\_web.pdf](https://www.regjeringen.no/globalassets/upload/kd/vedlegg/barnehager/engelsk/act_no_64_of_june_2005_web.pdf)

- Ministry of Education and Research. (2006). *Framework plan for the content and tasks of kindergartens*. The Norwegian Ministry of Education and Research. Retrieved from <http://www.regjeringen.no/upload/kilde/kd/reg/2006/0036/ddd/pdfv/285775-rammeplanen-engelsk-pdf.pdf>
- Ministry of Education and Research. (2017). *Framework plan for the content and tasks of kindergartens*. The Norwegian Ministry of Education and Research. Retrieved from <https://www.udir.no/globalassets/filer/barnhage/rammeplan/framework-plan-for-kindergartens2-2017.pdf>
- Naess, A. (1986). The deep ecology movement: Some philosophical aspects. *Philosophical Inquiry*, 8, 10–31. (Reprinted in *Deep ecology for the twenty-first century*, pp. 64–84, by G. Sessions, Ed., 1995, Shambhala).
- New Zealand Ministry of Education. (1996). *Te Whāriki: Early childhood curriculum*. Learning Media.
- New Zealand Ministry of Education. (2017). *Te Whāriki: Early childhood curriculum*. The Author. Retrieved from <https://www.education.govt.nz/assets/Documents/Early-Childhood/Te-Whariki-Early-Childhood-Curriculum-ENG-Web.pdf>
- Pinar, W. F. (2011). *The character of curriculum studies: Bildung, Currere, and the recurring question of the subject*. Palgrave MacMillan.
- Pinar, W. F. (2012). *What is curriculum theory?* (2nd ed.). Routledge.
- Pramling Samuelsson, I., & Kaga, Y. (2008). Introduction. In I. Pramling Samuelsson & Y. Kaga (Eds.), *The contribution of early childhood education to a sustainable society* (pp. 9–17). UNESCO. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000159355>
- Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: In search of conceptual origins. *Sustainability Science*, 14, 681–695.
- Rogoff, B. (2003). *The cultural nature of human development*. Oxford University Press.
- Sellers, M. (2013). *Young children becoming curriculum: Deleuze, Te Whāriki and curricular understandings*. Routledge.
- Skolverket. (2018). *Curriculum for the preschool 2018*. The Swedish National Agency for Education (Skolverket).
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. The Author.
- United Nations Educational, Scientific and Cultural Organization. (2014). *Shaping the future we want: UN decade of education for sustainable development (2005–2014) final report*. The Author.
- United Nations Educational, Scientific and Cultural Organization. (2015). *Rethinking education: Towards a global common good?* The Author.
- Weldemariam, K., Boyd, D., Hirst, N., Sageidet, B. M., Browder, J. K., Grogan, L., & Hughes, F. (2017). A critical analysis of concepts associated with sustainability in early childhood curriculum frameworks across five national contexts. *International Journal of Early Childhood*, 49, 333–351.
- Wirth, W., & Kolb, S. (2012). Securing equivalence: Problems and solutions. In F. Esser & T. Hanitzsch (Eds.), *The handbook of comparative communication research* (pp. 469–485). Routledge.
- Wood, E., & Hedges, H. (2016). Curriculum in early childhood education: Critical questions about content, coherence, and control. *The Curriculum Journal*, 27, 387–405.
- Zhou, X. (2012). ESD in early childhood [in Chinese]. *Early Childhood Education*, 7, 10–11.
- Zhou, X., Liu, Z., Han, C., & Wang, G. (2016). Early childhood education for sustainable development in China. In J. Siraj-Blatchford, C. Mogharreban, & E. Park (Eds.), *International research on education for sustainable development in early childhood* (pp. 43–57). Springer.