

Principals' Views on and Descriptions of Preschool Education for Sustainable Development

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Abstract

Principals have an important role to play when it comes to making decisions on organizational reforms and priorities in preschool; however, there has been little focus on their views on education for sustainable development (ESD) at the preschool level, which is a reform that needs to be prioritized. Furthermore, there is little insight into similarities and differences when it comes to how different types of preschools incorporate ESD, especially from the point of view of management. For this reason, this study aims to find out about the views on ESD that principals of eco-certified and non-eco-certified preschools have. A further aim is to examine whether there are any differences between the two types of preschools – eco-certified and non-eco-certified – as made evident in the principals' descriptions of ESD. This qualitative study applies a cross-sectional design. Seven principals, who headed a total of 22 preschools located in six municipalities in Sweden were interviewed: these interviews were audio-recorded and transcribed, and a thematic analysis was conducted. The findings demonstrate that the principals consider ESD to be crucial in early childhood education and feel ESD needs to be integrated into preschool education. Going by the principals' descriptions, it seems that the eco-certified preschools prioritize ESD in their daily educational practices more than non-eco-certified preschools do. Further studies are needed to explore the attitudes and actions of principals when it comes to heading ESD in preschool, since attitudes guide both actions and behavior.

Keywords: early childhood education; eco-certification; organizational leadership; preschool principal; sustainable development

1. Introduction

Globally, people are experiencing the unprecedented impact of climate change on the environment that affects human lives (Climate Council, 2019): for example, the vast wildfires in Australia that wiped out millions of animals and destroyed acres of forest, while also claiming the lives of people. More recently, the coronavirus pandemic has presented a huge global challenge to society and economic systems. As a way to deal with the emerging complex challenges that threaten the existence of people and the planet, education for sustainable development (ESD) was identified as a tool to achieve sustainability (United Nations, 2017).

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2019), the purpose of ESD is to empower learners ‘to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity’.

Leaders are responsible for shaping organizational conditions and developing the necessary capacity to implement new programs and practices (Davies, 2007; Jackson, 2007). As leaders within education, principals have the authority to facilitate organizational reforms and to decide what activities need to be prioritize. Despite the fact that preschool principals have an important role when it comes to setting directions, there is a considerable gap in knowledge in terms of their views, commitment and functions in childcare and preschool settings, especially in relation to early childhood education for sustainable development (Hayden, 1997; Håkansson, 2017; Jackson, 2007; Lunneblad & Garvis, 2019). Such knowledge is required since sustainable development is a value-laden concept that links to personal beliefs, attitudes, and values.

This study aims to develop knowledge about the views on ESD held by principals of eco-certified and non-eco-certified preschools in Sweden. It further aims to open for insight into the similarities and differences in how different types of preschools work with ESD. In this paper, the term eco-certified preschool refers to preschools that incorporate ESD as based on the curriculum and sustainable school operations. The eco-certification can be either ‘Green Flag’ certification from the Keep Sweden Tidy Foundation (HSR, 2019) or the ‘Diploma of Excellence in Sustainable Development’ from the Swedish National Agency for Education. To be eco-certified, preschools need to comply with a set of sustainable development-related criteria: for example, systematic quality work in educational management; involvement of teachers and children in the planning, implementation and evaluation of education activities; and documentation and reporting of education (SKOLFS 2009:19). Although ESD is integrated into Swedish policy documents, there is no national level follow-up (Mogren & Gericke, 2017).

In Sweden, preschool refers to early childhood education that is normally for children under the age of six. From the age of one, all children can attend preschool, with children entitled to three hours per day of free preschool education from the autumn of the year they reach the age of three (Skolverket, 2018). A new curriculum for preschool (Skolverket 2018a) came into effect in July 2019: there, the title ‘preschool director or head of the preschool (*förskolechef*)’ has been replaced by ‘principal (*rektor*)’ (Skolverket, 2018a). According to the new curriculum, a principal is an educational leader and head of preschool education and has the overall responsibility of ensuring that education as a whole is such that it accords with national goals.

Given that they have this responsibility, there is a need for scientific knowledge that supports both principals in their positions as leaders and preschools in their inclusion of ESD. Upon this background, this study addresses the following research questions:

- How do principals describe the educational activities concerning sustainable development at their eco-certified or non-eco-certified preschools?
- How do principals view the importance of educational activities in preschool that relate to sustainable development?
- What are the similarities and differences in the principals' views and descriptions of educational work related to sustainable development at their preschools?

2. An Overview of the Field

This section includes a brief description of relevant international and national policies concerning ESD, as well as a review of literature that addresses educational leadership in relation to ESD in early childhood education.

2.1. *International and National Policy Documents about Sustainable Development*

In 1987, the concept of sustainable development was defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their needs' (WCED, 1987, p. 43). To simplify the complexity of the concept, three interconnected dimensions – the environmental, the social and the economic – were introduced. The environmental dimensions deal with the human relation to nature and the preservation of ecosystems. The social dimensions deal with people's lives in terms of democracy, participation, emancipation, solidarity, and peace. The economic dimensions deal with concerns about reducing the consumption of goods and services, and direct environmental burdens in terms of the production and use of natural resources (Siraj-Blatchford, Smith, & Pramling Samuelsson, 2010).

To promote sustainable development, the General Assembly adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs). The Agenda emphasizes the importance of quality early childhood education and care (Goal 4.2), as well as the need to promote sustainable development through ESD and sustainable lifestyles (United Nations, 2015). ESD stresses the necessity of enabling people to acquire the knowledge, attitudes, values and capacity that are needed to promote sustainable development and of

learners adopting ‘behaviors and practices that enable all to live a full life without being deprived of basics’ (UNESCO, 2006, p. 4).

International policies are highlighted in early childhood education curriculum in several countries; for example, the Australian Early Childhood Education Framework (ECECF) has integrated the concept of sustainable development, which is to be embedded in educational practices as an aspect of teaching and learning (Ärlemalm-Hagsér & Davis, 2014). Similarly, the new Swedish curriculum for preschool (Skolverket, 2018a) explicitly mentions ‘sustainable development’ with a focus on preschool education and children’s learning. Under the sub-heading ‘Sustainable Development, Health and Well-being’, the new curriculum requires that preschool education should provide children with the opportunity to acquire an ecological and caring approach toward their surrounding environment and society. In addition, the curriculum emphasizes how everyone who works in preschool needs to promote respect for the intrinsic value of the individual and for sustainable development (Borg & Pramling Samuelsson, 2019).

It is important to begin including ESD in early childhood education (e.g. Davis, 2015; Pramling Samuelsson, 2011), where there is opportunity to work with sustainable development-related issues. ESD ‘seeks to empower people of all ages to assume responsibility for creating a sustainable future’ (UNESCO, 2002, p. 5). In ESD, children are viewed as agents for change with the capacity to be involved in activities related to sustainable development. In this regard, principals play an important role since they have the responsibility and authority to ensure that preschool staff gain the skills and knowledge needed to carry out work duties in a professional manner (Skolverket, 2018a).

2.2. Educational Leadership and Culture of Sustainability

Schein (2010, p. 7) argues that there is a close connection between leadership and organizational culture, which can be described as ‘two sides of the same coin’. Nevertheless, transitioning a preschool’s educational practices toward sustainable development requires a reform in the way schools work: this includes many aspects – curriculum, teaching, culture, and resource usage (Jensen, 2005). Accordingly, effective implementation of ESD starts with proactive school leaders (see, Mogren & Gericke, 2017). The authors argue that the proactive school leaders support the process of implementation of transformative education for sustainable development that helps create structures and routines that integrate ESD into the (pre)school organisation.

A number of studies have identified a gap between the self-reported importance of sustainable development and the actual practices of school managements (Gough, 2006; Jackson, 2007;

Zachariou & Kadji, 2009). The findings of a nationwide study in Cyprus, which included 150 primary schools, show that the perceptions most principals have in terms of ESD are limited to environmental education, whereas some principals are able to connect it to social and economic dimensions (Zachariou & Kadji, 2009). The findings of Jackson's (2007) study, conducted in England, indicate that those leaders who support the integration of ESD into their schools are motivated by their own passion for questions related to sustainability.

Creating a culture of change in an organization includes the processes of both working towards a common goal and achieving changes that are appreciated and meaningful (Fullan & Ballew, 2001). Research in the field of early childhood education suggests that strong leadership is crucial for the successful implementation of systems that help to maintain quality and to create a climate that promotes children's maximum growth and development (Bloom & Bella, 2005; Bloom & Sheerer, 1992; Carr, Johnson, & Corkwell, 2009; Kagan & Bowman, 1997; Talan, Bloom, & Kelton, 2014). Therefore, it is important to explore how principals view ESD in terms of its importance and what dimensions of sustainable development they stress in their understanding.

Creating an organizational culture that focuses on sustainable development in early childhood education requires 'shared visions, values, and beliefs at heart' (Sergiovanni, 2003, p. 14). Culture acts like a compass, guiding people in a common direction. Davis (2015, p. 22) argues that the creation of cultures of sustainable development is a process that transforms our ways of 'thinking, practices and relationships around sustainability' and that this occurs from the inside and cannot be imposed by external agents. Therefore, the role principals have in creating cultures of sustainable development in early childhood education is vital, since leaders can either constrain or support an organization's operations (Gibson, 2015).

3. Materials and Methods

To answer the research questions, a qualitative study with a cross-sectional design was used. A semi-structured interview guide was developed to collect data from preschool principals (see Appendix). Brief descriptions of the participants, data collection process, thematic analysis of data and ethical considerations are given below.

3.1. Participants and Data Collection

Of eight preschool principals who were contacted, seven agreed to take part in the study. These seven principals headed 22 preschools located in six municipalities in Sweden. All were

women: this is not surprising since in 2015, only 360 of 4901 principals of Swedish preschools were men (SCB, 2020). Three principals worked at both eco- and non-eco-certified preschools, whereas four principals worked at either eco- or non-eco-certified preschools.

A semi-structured interview guide (see Appendix 1) was developed to explore how the principals view preschool ESD and how they describe educational practices related to sustainable development at their own preschools. Individual interviews were conducted between February and August 2015. The principals were allowed time for reflection and given the opportunity to express their views on various matters relating to the topic (Cohen, Manion, & Morrison, 2011; Creswell & Clark, 2007). Instead of being asked about the differences and similarities between eco- and non-eco-certified preschools, the principals were asked to describe the educational practices at their preschools and to state whether the preschools worked with ESD. During the interview, the principals were encouraged to discuss any additional issues that they felt important.

The interviews were audio-recorded with the permission of the participants. The interviews took between 23 and 45 minutes (the longer interviews were with those who were principals of more than one preschool). Interviews equalling a total of 203 minutes were audio-recorded. The places of interviews were determined by the principals themselves so that they could avoid the inconvenience of travel. Five principals were interviewed alone, while two were interviewed in the presence of two preschool teachers who were directly involved in implementing ESD at their preschools.

Most sections of the interviews were transcribed word for word, whereas others were merely summarized since they were not directly relevant to the research questions. The transcriptions were translated from Swedish into English to prepare publications for international journals. To ensure linguistic accuracy, the translated transcriptions were checked by a native Swedish-speaking researcher who is also fluent in English.

3.2. *Thematic Analysis*

A thematic analysis (Braun & Clarke, 2006) was conducted in six steps: familiarization with data, generating initial codes, searching for themes among codes, reviewing themes, defining and naming themes, and producing the final findings. For this paper, the audio-recordings of the principals' interviews were listened to several times before they were transcribed. The transcriptions were read and re-read so that the researchers (both authors) became familiar with the data, and then initial codes were generated. Any unclearness or inconsistencies in the

transcriptions were checked by replaying the audio-recording. Repeated words and concepts in the data were noted as repetition, which is one way to identify themes (Ryan & Bernard, 2003). For example, in the principals' descriptions of sustainable development, the repetition of such words as 'environment', 'nature', 'composting', 'Earth' 'world' and 'planet' helped us identify the preliminary theme 'focus on environmental dimensions', indicating that the principals' descriptions emphasize the environmental dimensions of sustainable development. In this way, the initial codes were collated to form potential themes: for example, sustainable development definition, preschool prioritizing sustainable development. The preliminary themes were reviewed as a way to examine their relevance to the research questions, because all themes were not equally important. Finally, the themes that related to each other were merged. The main themes and sub-themes were checked again and refined so as to answer the research questions.

3.3. Ethical Considerations

The study adheres to the ethical codes and guidelines of the Swedish Research Council (Vetenskapsrådet, 2011; 2017). Initially, the principals were informed about the purpose of the study by email and were then contacted by phone so that they could receive additional information if required. All the principals provided their informed written consent to participate in the study. They were informed that their participation was completely voluntary and that all information that related to them, their preschools and the relevant municipalities would be confidential. The study did not include sensitive information or the personal details of the participants. The participants were informed that they could discontinue their involvement at any time without providing a reason. They were also informed that the interview data would be used for research purposes and for presentations at academic conferences.

4. Results

Emerging themes from the analysis are presented in two main categories: Principals' Views on Education for Sustainable Development; and Reported Educational Practices among Eco- and Non-Eco-Certified Preschools, see below.

4.1. Principals' Views on Education for Sustainable Development

The findings are presented under three emerging themes: Environmental and Social Dimensions in Focus; Crucial to Start ESD at an Early Age; and Lack of ESD Competence among Preschool Staff.

4.1.1. Environmental and Social Dimensions in Focus

All principals described education for sustainable development as knowledge about the environment and care for nature and animals. Principal E stated that ESD is about working with organic food and the use of chemicals and the environment. Some of the principals (A, B, C, D and G) view ESD as being about listening to children and creating opportunities for them to learn how to recycle and how to be environmentally aware. The social and, to some extent, economic dimensions were mentioned by a few principals. For example, the principals described how ESD deals with our lifestyles; the relationships between human beings; the way in which human beings treat one another; the consumption of natural resources; our conscience; and fundamental values. According to Principals D and G, ESD is not only about the environment but also about listening to children and respecting their opinions, democracy, and the way in which people may think of living their lives. Principal C stated:

Yes, it's [ESD is] all about lifestyle, food, how we are towards one another. I think that this set of values is embodied in all these parts; in fact, it may be included in everything we do in preschools.

According to Principal F, 'We together must protect our environment and we have to start with young children to help them to understand that they are the ones who will gradually take over, and they may understand that it is important'. However, one principal (A) talked about the economic dimensions of sustainable development, and her justification was that for some people, the concept of sustainable development can be limited to recycling activities, but it is much more than that: she says that sustainable development 'for us is ecological, economic and humane – everything has to do with everything'.

4.1.2. Crucial to Begin Including ESD at an Early Age

All principals emphasized the importance of ESD in preschool education. They all considered ESD for young children to be both meaningful and urgent. Principal B argued that 'Children should be given the opportunity to take part in everything that has to do with the environment'.

Principal E said:

(...) from my point of view, a simple answer to this is, of course, that we must have sustainable development so that we can keep our Earth for the future, for our children, that's it.

Similarly, Principal A stated that 'We must begin to learn things when we are young; then we can behave in a proper way'. According to Principal B, what children learn when they are young remains with them as adults. She mentioned the Swedish preschool curriculum (Lpfö 98, Rev.

2010), which states that children should have the opportunity to be part of everything that relates to the environment, lifecycles and so on. An early start with ESD was viewed as being crucial by the principals.

4.1.3. Lack of ESD Competence among Preschool Staff

All principals noted the importance of preschool employees integrating ESD into their work, yet they also stated that doing so is both difficult and complicated. According to them, it is especially challenging for preschool teachers who have yet to work with the concept of sustainable development. In this regard, Principal D stated:

Many may become a bit nervous about this. When they think about the Green Flag, they think about report writing. If you look at this (a report), you see there's a lot of work. So it (a report) requires a lot of writing, it takes time. This is nothing they (teachers) get extra time for. You could say that the preschool already has too little time for planning, so they are careful with their time. So it's a bit overwhelming for some, I would say.

Some principals worried about teachers having a larger workload if preschools were to integrate ESD into their daily activities, stating how teachers already have high workloads.

4.2. *Reported Educational Practices among Eco-Certified and Non-Eco-Certified Preschools*

The principals described the work done at their preschools in terms of education. From their descriptions, some similarities and differences are identifiable in the ways that eco-certified and non-eco-certified preschools integrate ESD. The findings are presented under four emerging themes: Prioritization of ESD in Preschool; Daily Educational Practices in Preschools; Participation of Parents; and Reporting and Documentation of Educational Activities.

4.2.1. Prioritization of ESD in Preschool

The principals reported that eco-certified preschools gave high priority to ESD in educational activities, whereas non-eco-certified preschools prioritized other educational activities. The personal interests and commitments of individual teachers were also mentioned as being main reasons for why some preschools prioritized ESD in their daily activities. In this regard, Principal D stated that:

(...) it depends on the teachers who work at the preschool. There are maybe one or two who are proactive, and they have managed to engage the whole preschool, although it has not been easy for them.

Principal A explained that the reason that teachers prioritized ESD at her two eco-certified preschools was that they ‘care for the future of children and the survival of Earth’. Principal E stated that ‘I think it depends. There are preschool teachers and principals who promote this issue’.

4.2.2. Daily Educational Practices in Preschools

The principals of eco-certified preschools reported that all eco-certified preschools work with different themes, for example, water and electricity consumption, or lifestyle and health, during a certain period ranging from six months to two years. Regardless of the profile of the preschool, findings showed that all 22 preschools work with nature and the environment: for example, teachers take the children to forests; they look at different trees, plants, small animals and insects; and they learn to care for the environment.

Two principals (D and E) stated that despite the activities of non-eco-certified preschools sounding similar to those of eco-certified preschools, the non-eco-certified preschools usually focus on discussion about the environment, whereas eco-certified preschools involve children in exploration or experimental activities in nature. For instance, Principal D explained that her eco-certified preschool worked with a theme called ‘lifestyle and health’, which included activities relating to friendship, social interaction, health, nutrition and food. In this preschool, she explained, children attended green council meetings, where they could take part in decision-making and influence the planning and activities of the preschool. She compared this eco-certified preschool with her three non-eco-certified preschools and explained that the non-eco-certified preschools did not have these kinds of activities at all. Principal D gave an example of how her eco-certified preschool works with electricity consumption, stating that the teachers and children reflect on the following:

[H]ow much electricity do we use? Do we save any electricity? How much is used for lighting? Where does water come from? These are the themes of the preschool. They are quite common, but when they get deeper, I don’t think they (teachers at non-eco-certified) do so in the same way. One preschool (eco-certified) has this thought – they have, for example, an electricity-free day when they cook over an open fire, yes, and they don’t turn any lights on. They use no electricity inside the preschool (on that day).

Principal F described how teachers try to spend time in forests as much as possible and how these outdoor activities lead to discussions about nature and animals between teachers and children. Principal C pointed out that if preschool staff were to follow the Swedish curriculum (Lpfö98 rev 2010), then they would spend a great deal of time in forests involved in different activities, such as playing, eating and exploring. However, Principal B, who was in charge of

four preschools, pointed out that ‘I have not seen any differences between eco-certified and non-eco-certified preschools more than the fact that in the Green Flag preschools, trash cans are visible. I have just taken on this position (principal) and have not had the opportunity to see a great deal yet’.

According to all the principals, it is common to have activities related to water, electricity, composting, recycling, planting and the lifecycle of butterflies regardless of whether or not the preschool is eco-certified. For example, Principal D explained that:

(...) at the [eco-certified] preschool, they work with their Green Flag more on an experimental basis with their children than what they do here [at the non-eco-certified preschool]. Here they do more talking, and adults become role models for children. The [eco-certified] preschool works more actively, experimenting with different things and seeing what happens and so on.

4.2.3. Participation of Parents

Two principals (A and B) spoke about the importance of involving parents and guardians in preschool activities. According to Principal B, it is the responsibility of preschools to inform parents about their activities and to involve them in some of these. Principal A explained how in her two eco-certified preschools, parents take part in different activities related to sustainable development issues and:

[N]ow the parents will be here on April 20 to work with this garden, which is one way of involving parents in this thinking, what it is to work in the garden and what our themes are and things like that. The parents have various levels of awareness.

These principals felt that the involvement of parents in children’s education is crucial and valuable. Principal B stated that ‘It is our responsibility to inform parents about how we work, because the parents must have knowledge about the preschool’s activities.’

4.2.4. Reporting and Documentation of Educational Activities

The findings also showed that in general, all preschools document their activities and write reports about their educational work on a regular basis; however, they also showed that eco-certified and non-eco-certified preschools report in different ways, as discussed by principals who head both preschool types. Principal D argued that:

[W]hen I read reports and so on, there is also a difference in children’s thinking about sustainable development. However, I can see primarily how teachers think about sustainable development, the importance of food, our lifestyles, what we eat, friendship,

how we behave toward each other, how we connect with each other, so our basic value is really important. They [the eco-certified preschools] work in a clear way.

The principals who headed both eco-certified and non-eco-certified preschools mentioned that the reason for differences in documentation and reports is that the eco-certified preschools are supposed to submit their reports in a special format in accordance with guidelines and instructions.

5. Discussion

5.1. Results Discussion

The findings demonstrate that the environmental and social dimensions are known and considered to be relevant to ESD, but that the economic dimension is largely missing in the answers given by the principals. This finding is consistent with Zachariou and Kadji's (2009) study, which also demonstrates that the understanding of sustainable development of most principals was limited to environmental education. Considering the role of principals as leaders who are responsible for implementing new programs and practices (Davies, 2007; Jackson, 2007), it is important that they are aware of all three dimensions – the environmental, the social and the economic – of sustainable development. These three dimensions interconnect, and it is important that all of them are taken into account when policies and practices are being developed (Siraj-Blatchford et al., 2010).

The view of the principals is that children need ESD at a young age since it lays the foundation for their future thoughts on sustainable development. This is consistent with Hofstede, Hofstede and Minkov (2010), who stressed that what children learn when they are young is difficult for them to unlearn later in life. To ensure ESD at a young age, the new curriculum for preschool in Sweden (Skolverket, 2018a) has integrated ESD issues that were not explicitly mentioned in the previous curriculum.

Principals talk about the lack of competence among teachers to teach ESD and the lack of inspiring examples for how to teach ESD. This is similar to the findings in other studies that pointed out these same two challenges when it comes to implementing policy (Borg, Gericke, Höglund, & Bergman, 2012; Corney, 2006). Our study also showed that principals considered ESD to be difficult and complex for teachers. According to them, working with ESD is challenging for those who have yet to work with it as a concept. The findings of our study also indicate that two principals viewed ESD as being something additional – something not part of the preschool curriculum, whereas the UNESCO (2005:4) document states that ESD needs to

be 'embedded in the whole curriculum, not as a separate subject'. This might indicate limited interest in the topic on the part of those principals. However, since ESD is mentioned in the new curriculum (Skolverket, 2018a), the question is how all in-service preschool teachers, child minders, and principals are going to acquire the skills and knowledge they need for their positions. It will therefore be a challenge for the Swedish National Agency for Education to ensure that these issues are handled professionally, and that preschool staff are confident in how to implement the new curriculum.

Some principals felt that the initiative for working with ESD must come from the teachers; it is not something that the principals should propose or decide. All principals, meanwhile, stated how there is no extra time allocated to teachers in eco-certified preschools to prepare reports for certifying organizations. We think that if ESD is integrated with regular pedagogical planning and activities, there would be no need for teachers at eco-certified preschools to write additional reports for certifying organizations. Nevertheless, the creation of an organizational culture of sustainability requires shared visions and values, which means that the principals have an important role to guide the preschools in a common direction (Sergiovanni, 2003). To address this issue, it would be worthwhile exploring what kind of leadership is needed to create a culture of sustainability in preschool settings, because principals are responsible for providing necessary support to develop the capacity required to implement new programs and practices (Davies, 2007; Jackson, 2007). The new Swedish preschool curriculum also states how it is the responsibility of the principal to ensure that education at preschool are in accordance with the goals of the curriculum.

From the results about the educational practices of preschools, it seems that there are more differences than there are similarities in the planning and delivery of education in eco-certified and non-eco-certified preschools. For instance, the principals reported that the eco-certified preschools prioritized ESD, and this they did by, for example, working with themes related to the environmental and social dimensions of sustainable development. These preschools seemed to focus on experimental work in which children take part actively, whereas non-eco-certified preschools seem to create opportunities for children to be out in nature. These findings are quite similar to other case studies (Davis, 2005; Lewis, Mansfield, & Baudains, 2010; Mackey, 2012), which indicates that the activities of eco-certified preschools focus on action for change by involving children in different activities. Studies (Borg, Winberg, & Vinterek, 2017; Corsaro, Molinary, & Brown Rosier, 2002) have shown that young children's practical knowledge relates positively to their involvement in practical activities, and, therefore, it is

important that preschools create opportunities for young children to be engaged in practical activities. However, no studies have yet been carried out to evaluate the outcomes of eco-certified and non-eco-certified preschools at the national level in Sweden. Knowledge about such outcomes is crucial for both practitioners and policymakers to ensure ‘evidence-based decisions and results-oriented programs’ (UNESCO, 2016, p. 38).

5.2. *Methods Discussion*

This study has some limitations that need to be considered when its findings are being interpreted. The findings are based on what the principals said about the differences between eco-certified and non-eco-certified preschools, but no triangulation was used to verify the information. Since the study aimed to find out about the views principals had on ESD, it seemed appropriate to use a qualitative study design to answer the research questions. The semi-structured interviews allowed participants to have enough time to think about and reflect on the topic. Since the study included a limited number of participants, the findings should not be used to draw generalizations. Nevertheless, the findings are relevant and useful.

6. Conclusion and Implications for Research

The findings indicate that the principals viewed ESD to be important and essential for very young children despite the fact they consider ESD to be complex and challenging. They also viewed ESD to be especially challenging for preschool teachers who have yet to work with the concept of sustainable development. The principals also had different views on their role as leaders to set goals for the implementation of ESD activities in preschools. Most of them were aware of the environmental and social dimensions of sustainable development, but their awareness about economic dimension of sustainable development seemed limited. There is a need for more knowledge about all three dimensions of sustainable development so that the interconnectedness of these can be understood and implemented by the management of the whole preschool. The economic dimension of sustainable development has yet to be addressed, and as such it is unclear how this particular dimension can form a component in preschool education: the question is not only how the economic dimension can be included in preschool educational activities rather what can be integrated.

From the descriptions provided by principals, it would appear that the eco-certified preschools prioritized ESD in their daily educational practices more than non-eco-certified preschools did. Further, the eco-certified preschools seemed to include more experimental activities with

children using sustainable development themes than the non-eco-certified preschools. In terms of the reporting and documenting of educational tasks, the eco-certified preschools seemed to be systematic when it came to ESD.

Preschool staff and principals need to receive professional development in the field of ESD so that they can confidently implement it in their preschools. It is also important that a larger study be conducted that explores principals' attitudes, actions and commitments with regard to ESD since attitudes guide actions and behaviours. In higher education, it is crucial that student teachers graduate with the skills and competence required to work professionally with ESD in a way that includes the environmental, the social and the economic dimensions of sustainable development. To protect our one and only planet for present and future generations, everyone in society needs to take responsibility and to act for 'environmental integrity, economic viability and a just society' (UNESCO, 2019).

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Professor Monika VINTEREK received her Master of Education (M. Ed) and Master of Arts (MA) in Social Science and History in 1984 and her Doctor of Philosophy (PhD) in 2002 from Umeå University, Sweden. She became an Associate Professor (*docent*) at Umeå University in 2009 and Professor in Educational Work at Dalarna University in 2011, where she still holds a position and is the Head of Educational Work and Chair of the Council of the doctoral program in Educational Work. Vinterek's main research interests are general questions related to teaching and learning, and what supports and stimulates children and students in their learning. Currently, one of her more extensive research projects is about reading practices in compulsory

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Appendix

Interview guide for principals Education for Sustainable Development in Preschool
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Participant

1. Preschool:	ID nr:
2. Municipality:	

Interview information

Date:	Interview started:	Interview ended:	Total time (minutes):
Interview status: <input type="checkbox"/> Completed <input type="checkbox"/> Partly completed. Reason: _____ <input type="checkbox"/> Not started. Reason: _____ <input type="checkbox"/> Audio recording			
Interviewed by:			

Background information

4. Principal's sex: <input type="checkbox"/> Woman <input type="checkbox"/> Man

5. Total number of teachers (with either teacher education, preschool teacher education or recreational pedagogical education qualification) at this preschool: _____

Total number of child minders at this preschool: _____

Total number of children at this preschool: _____

6. Certified preschool:

Yes. Type of certification:

- Environmental school, year: _____
- Green flag, year: _____
- Preschool for sustainable development, year: _____
- Other: _____

No

7. School location:

- Semi-urban (more than 200 inhabitants)
- Small town (more than 3 000 inhabitants)
- Medium town (more than 10 000 inhabitants)
- Large city (Stockholm, Gothenburg, Malmo)

8. How important is it for you that preschools work with environment and sustainable development?

- Very important
- Important
- Quite important
- Not so important
- Not at all important

Please motivate your answer:

9. How are environmental and sustainable development activities prioritized at this preschool?

- Very important
- Important
- Quite important
- Not so important
- Not at all important

Please motivate your answer:

10. How does this preschool work to develop children's interest and understanding of how people, nature and society influence each other?

11. What differences have you noticed between eco- and non-eco-certified preschools with regard to pedagogical practices concerning sustainability issues?

12. Is there anything that you would like to add?
