



DISSERTATION APPROVED BY

4-1-16

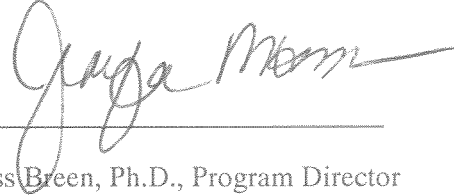
Date




Julie Gaddie, Ph.D., Chair



Therese Uri, Ed.D., Committee Member



Jennifer Moss Breen, Ph.D., Program Director



Gail M. Jensen, Ph.D., Dean

LEADERSHIP AND EARLY CHILDHOOD EDUCATION FOR SUSTAINABILITY:  
A MULTIPLE CASE STUDY

---

By  
JACQUELINE C. NOELKE

---

A DISSERTATION IN PRACTICE

Submitted to the faculty of the Graduate School of Creighton University in Partial  
Fulfillment of the Requirements for the degree of Doctor of Education in  
Interdisciplinary Leadership

---

Omaha, NE  
March 12, 2016

Copyright (2016), Jacqueline C. Noelke

This document is copyrighted material. Under copyright law, no part of this document may be reproduced without the expressed permission of the author.

## Abstract

As a response to an escalating awareness of global sustainability issues, an increasing number of early childhood leaders have chosen to adopt sustainability principles at their early childhood centers. However, there is a lack of research on Early Childhood Education for Sustainability (ECEfS), particularly from American authors. The purpose of this qualitative multiple case study, was to explore leadership traits and leadership experiences, of leaders from Midwestern United States private early childhood centers that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Purposeful sampling was used to gain three participants. Major themes across cases were: (a) physical space and nature, (b) values, (c) curriculum, (d) non-traditional leadership, and (e) desire for additional resources. A list of recommendations were developed for ECEfS leaders which included: (a) focus on the physical space as a starting point; (b) involve others when possible; (c) use a non-hierarchical approach to leadership; (d) inform potential new hires of your values and goals; (e) seek certifications/accreditations; (f) make sustainability a business advantage/use to attract families; (g) form partnerships; (h) share experiences with others and if possible publish experiences; (i) choose a transformational education model; (j) make small changes over time; and (k) learn change theory. Additionally, a recommendation for the development of a supporting organization for ECEfS was made.

*Key words:* Early Childhood Education for Sustainability, sustainability leadership

## Dedication

I dedicate this work to my mother, Catherine Coryell McCann, and grandmother Naomi Coryell, on her 95<sup>th</sup> birthday. These women are the most intelligent women I know, they taught me to value education, and they have inspired me to achieve things I once never thought possible.

## Acknowledgements

I have been very fortunate in this life to have so many people who have supported me through my academic endeavors. The dissertation journey has been challenging, but mostly rewarding, and I would not trade the process for the world. I could not have done this without the support of my committee, Dr. Julie Gaddie (chair) and Dr. Therese Uri (committee member). I was fortunate enough to have Dr. Uri as a professor. Her class inspired me and had a large impact on this dissertation. I knew several weeks into starting her class that I wanted her to be on my committee. When the time came to ask her, and she said yes, I was elated! Dr. Gaddie, talked me through every aspect of this process and I appreciated her research knowledge and her ability to support me, but most of all I appreciated the time that she dedicated to this process! Thank you! I would also like to acknowledge Dr. Leah Georges and Tara Waln-Lewellen for always answering my questions and guiding me through this program.

From the bottom of my heart, I thank my mother, who has supported me in so many ways it would be impossible to list them here. I thank my grandmother who once told me; “People can take anything away from you but they can’t take away your education!” That knowledge has served me well. Finally, I could not have done this without the support of my husband, Rob Noelke. He loves me unconditionally and inspires me to be a better person every day. He is my biggest fan and has always been supportive of all my endeavors, educational or otherwise. Thank you!

## Table of Contents

	Page
Abstract.....	iii
Dedication.....	iv
Acknowledgments.....	v
Table of Contents.....	vi
List of Tables.....	xi
CHAPTER ONE: INTRODUCTION.....	1
Introduction the study.....	1
Background of the problem.....	2
Statement of the problem.....	2
Purpose of the study.....	3
Research questions.....	3
Central research question.....	3
Sub research question #1.....	3
Sub research question #2.....	3
Sub research question #3.....	3
Significance of the Study.....	4
Aim of the Study.....	4
Methodology Overview.....	5
Definition of Relevant Terms.....	6
Delimitations and Limitations.....	6

Leadership Discussion .....	7
Summary .....	8
CHAPTER TWO: LITERATURE REVIEW .....	10
Introduction.....	10
Purpose of the Study .....	11
Aim of the Study.....	11
Sustainability.....	12
Sustainability Principles.....	12
Current Status of Early Childhood Education for Sustainability.....	14
Early Childhood Education.....	14
Early Childhood Education for Sustainability .....	15
The Need to Influence the Values of Tomorrow’s Adults.....	16
Children as Change Agents.....	17
Curriculum and Pedagogy.....	18
Early Childhood Education and Sustainability Leadership .....	22
Early Childhood Education Leadership .....	24
Leadership for Sustainability .....	23
Leadership for Sustainability Theory.....	23
Sustainability Leadership Model .....	25
Leadership and Early Childhood Education for Sustainability.....	28
Summary .....	31
CHAPTER THREE: METHODOLOGY .....	33
Introduction.....	33

Purpose Statement.....	34
Aim of the Study.....	34
Research Questions.....	34
Research Design.....	35
Participants.....	37
Instrumentation .....	38
The Researcher’s Role .....	38
Procedures.....	39
Data Analysis Plan.....	39
Reliability and Validity.....	40
Ethical Considerations .....	41
Summary.....	41
CHAPTER FOUR: RESULTS .....	43
Introduction.....	43
Purpose Statement.....	44
Aim of the Study.....	44
Summary and Presentation of the Findings .....	44
Data Analysis Procedures .....	44
Organization of Data and Findings.....	45
Case by Case Report .....	45
Case 1 Carly.....	45
Personal Connection .....	47
Sustainability in Early Childhood.....	49

Defining Sustainability .....	50
Initial Goals.....	50
Future Goals.....	50
Practical Application.....	51
First Steps.....	51
Engaging Others.....	51
Leadership.....	52
Daily Schedule .....	54
Curriculum .....	54
Sustainability Principles.....	55
Reflections and Lessons Learned.....	56
Obstacles .....	56
Benefits .....	56
Advice.....	57
Case 2 Becky.....	57
Personal Connection to Sustainability .....	58
Background.....	58
Personal Value .....	58
Defining Sustainability .....	59
Vision.....	60
Practical Application.....	60
First Steps.....	60
Leadership.....	61

Curriculum .....	62
Sustainability Principles.....	63
Reflections and Lessons Learned.....	65
Obstacles.....	65
Benefits .....	66
Role of Leadership.....	67
Case 3 Ana .....	67
Personal Connection to Sustainability .....	69
Background with Sustainability .....	69
Instilling a Value.....	70
Becoming Accredited.....	72
Vision.....	74
Practical Application.....	75
Engaging Others.....	76
Curriculum .....	77
Leadership Style.....	79
Leadership Role .....	81
Sustainability Principles.....	82
Reflections and Lessons Learned.....	84
Desired Resources.....	84
Reflections on Negative Impacts .....	85
Reflections on Benefits.....	86
Advice for Others.....	87

Analysis and Synthesis of Findings .....	87
Cross-Case Analysis .....	88
Themes Across Cases .....	88
Physical Space and Nature.....	88
Values .....	90
Personal Values.....	90
Instilling a Value.....	91
Parent’s Values.....	92
Curriculum .....	92
Constructivist.....	92
Sustainability.....	93
Non-Traditional Leadership.....	94
Education Level .....	94
A Less Hierarchal Approach.....	95
Passion for Sustainability.....	97
Desire for Additional Resources.....	98
Additional Space.....	98
Additional Support.....	98
Unique Themes .....	99
Summary .....	100
CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS .....	101
Introduction.....	101
Purpose Statement.....	102

Aim of the Study.....	102
Summary of Findings.....	102
Leadership Traits .....	103
Sustainability as a Personal Value .....	103
Passion for Sustainability.....	103
Non-Traditional Leaders.....	103
Leadership Experiences .....	104
Physical Space and Nature.....	104
Curriculum .....	104
Desire for Additional Resources.....	104
Implementations for Practice/Recommended Solution .....	105
List of Recommendations .....	105
Change Theory.....	106
Support for the Solution from Data Collected .....	107
Existing Support Structure and Resources.....	109
Potential Barriers and Obstacles for Proposed Solution.....	109
Financial/Budget Issues Related to Proposed Solution .....	110
Legal Issues Related to Proposed Solution .....	111
Implications/Recommendations for Further Research.....	111
Summary of the Study/Conclusion.....	112
References.....	115
Appendix A.....	121
Appendix B.....	124

Appendix C .....125

## List of Tables

	Page
Table 1. Significance of the Dissertation in Practice Study.....	4
Table 2. Children’s Thoughts on Sustainability .....	17
Table 3. Brief Introduction to Waldorf, Montessori, and Reggio Emilia Philosophies.....	19
Table 4: Principles Required for Sustainability Leadership .....	24
Table 5: Data Analysis Plan.....	39
Table 6: Sustainability Principles and Demonstration from Case 1 .....	55
Table 7: Sustainability Principles and Demonstration from Case 2 .....	63
Table 8: Sustainability Principles and Demonstration from Case 3 .....	82
Table 9: Data Analysis Plan.....	88
Table 10: Physical Space Quotes .....	89
Table 11: Instilling a Value Quotes .....	91
Table 12: Evidence of Curriculum.....	93
Table 13: Leadership Style .....	96
Table 14: Support Desired by Each Case .....	107

## CHAPTER ONE: INTRODUCTION

**Introduction to the Study**

Leadership and Early Childhood Education for Sustainability: A Multiple Case Study, was a qualitative multiple case study that explored leadership traits and leadership experiences of leaders who demonstrated sustainability principles in early childhood settings. Data collected from early childhood leaders involved with sustainability were used to uncover their leadership traits and leadership experiences. Sustainability is a complex idea with many definitions; therefore, it is important to define sustainability for the purpose of this study.

Researchers investigating Early Childhood Education for Sustainability (ECEfS) provide the following definition for sustainability; “sustainability concerns conditions for life and survival related to economic, ecological, moral, and social matters, stretching into the future of human kind and the earth” (Haggland, & Johansson, 2014, p.40). Therefore, sustainability aims to generate and maintain conditions in which humans and nature can exist in harmony today and in the future (EPA, 2016).

The Earth Charter International (2016) has identified four principles of sustainability, which include: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. This dissertation examined leaders from early childhood centers that demonstrated the above four principles. Participants were invited to participate based on a screening of published materials (school websites) that provided evidence of their early childhood centers demonstrating sustainability principles.

**Background of the Problem**

Research contributions from the United States on ECEfS are noticeably scarce. Internationally researchers have made contributions to this field of study. However, Davis (2009), an Australian researcher, notes published studies on the experiences of practitioners involved with ECEfS are few. There is a need for studies that reveal what has worked as well as the challenges leaders involved with ECEfS have faced; all while serving as inspiration to those interested in ECEfS (Davis, 2009). According to Davis (2014), Samuelson & Kaga (2008), and Stuhmcke (2012) there is a need for research on leadership for sustainability in early childhood settings. Davis (2014) notes there is a gap in the ECEfS research and a broader research schema could include the role of leadership for sustainability in early childhood. According to Stuhmcke (2012) both the processes of researching and theorizing about ECEfS practices are needed to inspire leaders and teachers in the field, and also to reveal best practices.

**Statement of the Problem**

There has been a call for leadership studies by leading researchers studying ECEfS (Davis, 2014). Sustainability is an important topic to introduce in the early years (Siraj-Blatchford, 2009), and with an escalating awareness of sustainability issues, an increasing amount of early childhood centers are adapting sustainability principles in their schools. Currently, early childhood leaders interested in sustainability are left with a lack of resources and a lack of research about the leader's role with sustainability (Davis, 2014).

**Purpose of the Study**

The purpose of this multiple case study was to explore leadership traits and leadership experiences of leaders from Midwestern United States private early childhood centers that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

**Research Questions**

Research questions were developed based on the purpose and aim of the study. The following research questions guided this qualitative multiple case study:

**Central research question.** How do early childhood leaders who lead centers that demonstrate sustainability principles, describe their role in implementing the following principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace?

*Sub research question #1:* How do early childhood leaders who lead centers that demonstrate sustainability principles describe their personal connection to sustainability?

*Sub research question # 2:* How do early childhood leaders who lead centers that demonstrate sustainability principles describe their experiences with the application of sustainability in their centers?

*Sub research question #3:* How do early childhood leaders who lead centers that demonstrate sustainability principles describe their reflections and lessons learned with early childhood education for sustainability?

### Significance of the Study

This study was significant because it produced scholarly research on a topic that was under researched. Additionally, this study has the potential of improving the practice of those interested in adapting a sustainability focus in their early childhood centers, and it has the potential of improving policy. Creswell (2014) suggests providing several examples of how a research study will be significant in the aforementioned areas. Table 1 outlines why this topic is significant, and the possible impact this research could have by adding to the literature, helping improve practice, and improving policy.

Table 1

#### *Significance of the Dissertation in Practice Study*

Add to the Literature	Help Improve Practice	Improve Policy
Add to under researched sustainability leadership studies	Inspire early childhood leaders to adapt a sustainability focus	Could inspire accreditations to include sustainability
Add to under researched early childhood education leadership studies	Inspire further research on the topic	Could influence early childhood policy makers
Pioneer research on sustainability leadership in early childhood studies	Guide for those interested in sustainability	Could inspire new accreditations that focus on sustainability

This study was needed to pioneer American research on sustainability leadership in early childhood, and to add to under-researched early childhood and sustainability leadership studies. Furthermore, this study has the potential of improving practice for a large number of educators and could result in policy changes that support ECEfS.

### Aim of the Study

The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles.

Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **Methodology Overview**

A qualitative multiple case study design was used to collect data from leaders from three private early childhood centers, demonstrating sustainability principles, in the Midwestern United States. Sustainability principles include: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. Creswell (2014) notes a case study is a design used when a researcher desires to develop an in-depth analysis of a case or phenomenon.

A multiple case study allows the study of one phenomenon across multiple cases (Merriam, 1988). This design allows one to discover variations within and between cases, and discover similarities between cases (Baxter & Jack, 2008). Baxter and Jack (2008) note case study research is appropriate for answering “how” and “why” questions. Additionally, a case study allows for an intimate understanding of a case because it requires the studying of data from a multitude of sources that explain the case (Baxter & Jack, 2008).

Most case studies in education are qualitative, and a case study approach allows for maximum opportunities to contribute to the understanding and practice of education (Merriam, 1988). A multiple case study aims to create abstractions across cases (Merriam, 1988). Therefore, a multiple case study was appropriate to uncover themes across the three cases used for this study. This process revealed leadership traits and

leadership experiences of three early childhood leaders who lead schools that demonstrated sustainability principles.

### **Definition of Relevant Terms**

The following terms were used operationally within this study.

*Early Childhood Education:* For the purpose of this study early childhood education or ECE refers to education for children ages 0-6.

*Early childhood center:* A school for children ages 0-6.

*Sustainability principles:* Four Principles that have been developed by The Earth Charter International (2016): (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

*Sustainability:* Aims to generate and maintain conditions in which humans and nature can exist in harmony today and in the future (EPA, 2016) by demonstrating the four sustainability principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace (The Earth Charter International, 2016).

*Early Childhood Education for Sustainability (ECEfS):* The following sustainability principles addressed in an early childhood context: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **Delimitations and Limitations**

The qualitative approach of this Dissertation in Practice was limited by a small sample size from one geographic location. This study included early childhood leaders in the Midwestern United States, the assumption was not made that the findings will be

representative of all early childhood leaders involved with sustainability. There may be some leadership experiences and leadership traits, of early childhood leaders involved with sustainability, which are not represented by the selected participants. Additionally, the lack of time to conduct a longitudinal study was a limitation. A longitudinal study could have provided a deeper understanding of each case. A delimitation of the study was also the small sample size chosen. However, small sample size was deliberately chosen due to time constraints, and because it is appropriate for qualitative studies (Roberts, 2010).

### **Leadership Discussion**

Leadership was the focus of this study. The goal of this Dissertation in Practice was to discover the leadership traits and leadership experiences of early childhood leaders who lead schools that demonstrated sustainability principles. Leadership theory, traits, issues, and styles were all addressed in the literature review as well as in the data reported. There were aspects of early childhood leadership and sustainability leadership with a main focus on uncovering what kind of leaders lead early childhood centers that demonstrated sustainability principles, and what kind of experiences these leaders have had with sustainability leadership.

As a researcher, who used the qualitative multiple case study method, a leadership role was imperative throughout the entire research process. This role included gaining the trust of participants, serving as a data collection tool by conducting interviews, transcribing all interviews, reporting and analyzing data, and using research skills to complete the entirety of the dissertation. The responsibility of the researcher was to make sense out of the data, “and making sense out of data involves consolidating, reducing, and

interpreting what people have said and what the researcher has seen and read – it is the process of making meaning” (Merriam, 1998, p. 178). For this case this meant analyzing and coding data to uncover patterns or themes across cases. The end result was the description of leadership traits and leadership experiences of leaders from three Midwestern private early childhood centers that demonstrated sustainability principles.

### **Summary**

The purpose of this multiple case study was to explore leadership traits and leadership experiences of leaders from Midwestern private early childhood centers that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. This study relied on a qualitative multiple case study design to gather data from early childhood leaders who lead schools that demonstrated sustainability principles. A central research question and three sub research questions guided this study.

The central research question asked; how do early childhood leaders who lead centers that demonstrate sustainability principles, describe their role in implementing the following principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace? The first sub research question asked; how do early childhood leaders who lead centers that demonstrate sustainability principles describe their personal connection to sustainability? The second sub research question asked; how do early childhood leaders who lead centers that demonstrate sustainability principles describe their experiences with the application of sustainability in their centers? The final sub research question

asked; how do early childhood leaders who lead centers that demonstrate sustainability principles describe their reflections and lessons learned with early childhood education for sustainability?

A multiple case study was used to uncover themes across three cases. These common themes revealed leadership traits and leadership experiences of three early childhood leaders who lead schools that demonstrated the four sustainability principles. Limitations and delimitations were revealed as well as leadership roles and responsibilities. The focus of this study was leadership traits and experiences of those who lead early childhood centers that demonstrate sustainability principles. Because this topic had not yet been researched it was needed and had the potential to impact many in the early childhood field.

## CHAPTER TWO: LITERATURE REVIEW

**Introduction**

Opportunities to engage with the natural environment have been historically common in Early Childhood Education (Davies, Engdahl, Otieno, Pramling-Samuelson, Siraj-Blackford, & Vallabh, 2009). However, internationally there have been a lack of early childhood programs that focus on Early Childhood Education for Sustainability (ECEfS) (Davis, 2008, 2009; Elliot, 2010). The field of early childhood education has been slower to adopt education for sustainability than other sectors of education (Elliot, 2010). However, with greater global awareness of environmental issues more and more early childhood educators are becoming interested in ECEfS (Davis, 2009; Elliot 2010). Because today's children are tomorrow's adults, early childhood education can play a significant role in influencing tomorrow's values (Siraj-Blatchford, 2009). Therefore, early childhood education should play an active role in sustainable development (Siraj-Blatchford, 2009).

Education for sustainability is about analyzing our current situation and how we do things, then changing our behavior (Elliot, 2010). There is a popular view among some parents and educators that young children cannot handle complex topics such as environmental issues. However, the literature reveals that in fact young children are capable of understanding such topics and can contribute to making local and global changes (Davis, 2008; Duhn, 2012; Elliot, 2010). Davis (2008) notes, attitudes and beliefs are formed during the early years, making it important to address issues such as sustainability with young children. The young child is capable of becoming an agent for

change (Davis, 2008) and they often have the ability to influence family members and others to become environmentally conscious (Davies et al., 2009).

There has been a lack of research on programs with sustainability as a main focus. Although more schools are adapting sustainability as part of their pedagogies they are not documenting and publishing their experiences (Davis, 2009). Furthermore, there is a lack of research on the experiences of those in leadership roles at schools who focus on Early Childhood Education for Sustainability (Davis & Elliot, 2014). The following sections are organized to introduce: (a) the current status of early childhood education for sustainability; (b) the importance of introducing sustainability concepts in early childhood; (c) sustainability curriculum and pedagogy; (d) leadership in early childhood education; (e) leadership for sustainability; and (f) leadership for sustainability in early childhood.

### **Purpose Statement**

The purpose of this multiple case study was to explore leadership traits and leadership experiences of leaders from Midwestern private early childhood centers that demonstrated sustainability principles. Sustainability principles are defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **Aim of the Study**

The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Sustainability principles are defined as: (a) respect and care for the community of life, (b)

ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **Sustainability**

Sustainability is an urgent issue that has global impacts with the serious costs for children and future generations (Davis & Elliot, 2014). The Environmental Protection Agency (EPA) reports that the United States uses one million gallons of oil every two minutes, and about 47,000 pounds of newly mined materials every year (EPA, 2016). On a global scale the amount of wood consumption has increased by 40 percent over the last 40 years with North America accounting for 40 percent of the production and consumption of wood (EPA, 2016). The earth has limited natural resources that are being consumed at an increasing rate, which causes harm to the ecological balance of earth systems (Siraj-Blanchford, 2009; EPA, 2016). These are just some areas of concern; human consumption and waste production is at an all time high (EPA, 2016) and changes are needed so that we can meet the needs of today without compromising the ability of future generations to meet their own needs, i.e. sustainability (Burton, 1987). Because sustainability is such an important topic it is beneficial to introduce sustainability concepts in early childhood, the period where many values are formed (Duhn, 2012).

### **Sustainability Principles**

As a response to global concerns for the future of the earth and all of its inhabitants, leaders from The World Commission on Environment and Development (known as “the Brundtland Commission”), first called for a charter or a new set of norms in 1987. Their vision was to develop new norms that would promote sustainable development. However, it took several years for the Earth Charter to come into fruition

(The Earth Charter Initiative, 2016). The idea for an Earth Charter remained in discussion at the Earth Summit in Rio de Janeiro in 1992, but other initiatives took precedent at that time. Ultimately, Maurice Strong (Secretary-General of the Rio Summit) and Mikhail Gorbachev, with the support of the Dutch government, launched an initiative to develop The Earth Charter in 1994. Developers of The Earth Charter referenced hundreds of international documents in their first draft of The Earth Charter (The Earth Charter Initiative, 2016).

Following the first draft, an Earth Charter Commission was formed in 1997 to work on drafting a final Earth Charter. This process took several years and involved leaders from around the world. After years of development and the collaboration of leaders from around the globe, The Earth Charter was released in the year 2000 during a meeting at the United Nations Educational, Scientific and Cultural Organization (UNESCO) headquarters in Paris. (The Earth Charter Initiative, 2016) The Earth Charter was instrumental in the development of the Plan of Implementation for the UNESCO Decade for Education on Sustainable Development. The charter has been used in many contexts, beyond its use as an educational framework for sustainable development, such as a resource for governmental and legislative efforts, and as a community development tool (The Earth Charter Initiative, 2016). Additionally, The Earth Charter has been utilized in peace negotiation efforts, and in the construction of global standards and codes of ethics (The Earth Charter Initiative, 2016).

The Earth Charter Commission recognizes that sustainable development moves beyond ecological integrity to include: ecological protection, the eradication of poverty, equitable economic development, respect for human rights, democracy, and peace (The

Earth Charter Initiative, 2016). Additionally, The Earth Charter provides an important educational tool. “It encourages us to search for common ground in the midst of our diversity and to embrace a global ethic that is shared by an ever-growing number of people throughout the world” (The Earth Charter Initiative, 2016). The principles outlined by The Earth Charter include: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace (The Earth Charter Initiative, 2016).

### **Current Status of Early Childhood Education for Sustainability**

#### **Early Childhood Education**

Early childhood is defined as occurring from infancy through age eight, with early childhood education including education for infant through third grade (Copple & Bredekamp, 2009). Research shows that this period of one’s life is the most critical and significant period for one’s development (Bates & Tregenza, 2006; Salonen & Tast, 2013; Copple & Bredekamp, 2009). Studies in neuroscience have produced evidence that the majority of growth and ‘wiring’ of the connections in the brain occur prenatally and during the first six years of life (Davis & Gibson, 2006). The experiences of infants and young children significantly influence physical and neurological development, which have a direct correlation to biological, psychological, and social emotional responses in later years (Davis & Gibson, 2006). Learning occurs faster at these young ages than at any other time. Research has also shown that healthy brain growth is dependent upon nurturing, positive, and stimulating environments (Davis & Gibson, 2006).

Although early childhood is defined as the period through 3<sup>rd</sup> grade many early childhood centers do not go past Kindergarten. There are several different types of early

childhood centers in the United States, which include center-based early childhood programs, for-profit and nonprofit, Head Start, publicly funded, and faith-based programs (Koraleck, 2005). The lengths of early childhood programs vary, with some offering half-day programs and some full day programs. Currently there are an increasing number of programs becoming interested in sustainability practices, pedagogy, and curricula for their schools (Davis, 2014).

### **Early Childhood Education for Sustainability**

Learning for sustainability encompasses ecological, moral, and social matters in an early childhood setting with children and teachers as actors (Hagglund, & Johansson, 2014). The education sector has slowly been adapting a more inclusive definition of sustainability (Davis & Elliot, 2014). This is proving to be a slow process as The *Brundtland Report* in 1987 first moved beyond the sole focus on ecology to include economy and equity as a way to define sustainability (Burton, 1987). Furthermore, the United Nations' *Agenda 21* in 1992 moved to include a more comprehensive definition that includes the interconnectedness between social, political, economic, and environmental realms (Davis & Elliot, 2014). Like the rest of the education sectors, early childhood education has historically focused on environmental education and remains slow to adopt a more comprehensive definition for their educational and operational purposes (Davis & Elliot, 2014). However, over the last several years the numbers of early childhood programs that are focusing on sustainability are increasing at a global level (Davis & Elliot, 2014). As more programs start adopting or looking into sustainability programs for their schools, there will be a need for an increasing amount of research on ECEfS.

**The Need to Influence the Values of Tomorrow's Adults and Leaders**

Neuroscientists have determined that young children's brains change as a consequence of the experiences they live (Davis & Gibson, 2006). This results in children forming many of their adult beliefs and values during early childhood (Davis, 2014). Therefore, it is important that issues such as sustainability be addressed during the early years. Sustainability education is an appropriate way to instill these values, as it not only addresses caring for the environment but also on a set of values that include social justice, responsibility, and caring for all humans and the world alike (Hagglund & Johansson, 2014). Children need to have what Kemp (2005) describes as two identities in order to become world citizens for sustainability change; one identity is part of their local community and the other is part of a universal planet or world (Hagglund & Johansson, 2014). This dual sense of identity is organically encouraged through early childhood settings that promote self-awareness, social emotional development, responsibility for others and the world, while creating a culture where children feel a connection and sense of belonging (Johansson, 2009; Hagglund & Johansson, 2014).

Children can develop values and attitudes that can stay with them for the rest of their life by attending programs that focus on sustainability and the above mentioned learning areas. These values will help guide children as they make decisions through the rest of their life span (Didonet, 2008). When facing difficult situations, or challenges, or making tough decisions, a person will be guided by her original values that formed her personality. Those values will inform behaviors, reactions, and assist with assessing options when making decisions (Didonet, 2008).

### **Children as change agents**

Young children are capable of becoming agents for change and making informed decisions for a more sustainable future (Bates & Tregenza, 2006; Davies et al, 2009; Davis, 2014). While environmental education has traditionally focused on awareness and knowledge about the environment, sustainability education addresses a wider scope of subject matter, including the interconnectedness of relationships between all living things (Bates & Tregenza, 2006), while also requiring the participation of the students to move toward a more sustainable future. An Australian case study found that 4-year-old children were capable of becoming change agents for sustainability after attending a program dedicated to ecological sustainability where they were active participants in sustainability initiatives (Bates & Tregenza, 2006). Table 2, from Bates and Tregenza (2006) shows some thoughts on sustainability from 4-year-old children who participated in a sustainability focused early childhood program.

Table 2

#### *Children's thoughts on sustainability*

“It goes through the pipe to the black pipe. When it is in the tank it goes through the grass up to the other pipe, the kindly pipe, it goes into something on the roof and it goes through somewhere and we get the nice clean water and it goes into the grown ups cup of tea”- Olivia

“Water can't be left on” –Georgia

“Don't waste water for the ducks”- Jakeb

“The rain falls off the clouds”-Jakeb

“If you see the tap dripping you turn it off.” –Kiran

“Turn the tap off when it is on.” –Michael

“You look after water so you don't waste it”-Jessica

“We play with water outside from the tank.” –Emily

“The solar panels are on the roof. They get energy from the sun. They heat up the water.”-Olivia

*Note.* Source: Bates & Tregenza (2006) p. 7

This case study also supports the idea from Davies et al. (2009) that young children have the power to influence their parents to make more sustainable choices. Bates and Tregenza (2006) report on an experience a parent had with her four year-old child at the supermarket. When looking to buy eggs the four-year-old said to her mother, “We can’t buy these mummy, they don’t have a recycle symbol on them” (Bates & Tregenza, 2008, p. 8). This example also supports Davies et al. (2009), showing that young children can reduce their ecological footprint. Additionally, the above case study shows young children can become agents for change when attending a school that focuses on sustainability.

### **Curriculum and pedagogy**

Sustainability education is about change, therefore transformative educational models or approaches are most useful in creating agents for change (Davis, 2014). A transformative educational approach must give students opportunities to learn by doing or taking action (Davis, 2014). This can also be described as constructivist learning models. Constructivist learning occurs when an individual’s knowledge is acquired through actions, interaction with the environment, and by using accommodation and assimilation as adaptive mechanisms (Martin & Booth, 1997). Increasingly greater levels of knowledge are acquired through this process (Martin & Booth, 1997).

A constructivist educator that is also transformative utilizes a pedagogy that encourages problem-solving, participation, decision-making and gives the children the clout to make choices, all while giving children the power to take action (Mac Naughton and Williams, 2009; Davis, 2014). Transformative early childhood programs also encourage inquiry of real-life problems that are of interest to the students (Davis, 2014). Montessori, Reggio Emilia, and Waldorf are some examples of constructivist, transformative, approaches to education. “All three approaches view children as active authors of their own development, strongly influenced by natural, dynamic, self-righting forces within themselves, opening the way toward growth and learning” (Edwards, 2002, p. 4). Table 3 gives a brief introduction to the Waldorf, Montessori, and Reggio Emilia philosophies and how each philosophy compliments ideas of sustainability.

Table 3

*Brief Introduction to Waldorf, Montessori, and Reggio Emilia Philosophies.*

	Waldorf	Montessori	Reggio Emilia
History	Founded by Rudolf Steiner (1861-1925), Austrian Scientist and philosopher	Founded by Maria Montessori (1870-1952), Italy’s first woman physician	Founded by Loris Malaguzzi (1920-1994), Educational Leader from Reggio Emilia Italy
Child development/ Curriculum	Focuses on the unity of spirit, soul, and body.  Three cycles, of seven year stages, each with distinctive needs for learning  Focus on bodily exploration,	Focuses on children’s natural intelligence involving rational, empirical, and spiritual aspects.  Multi age classrooms spanning 3 years with an individualized curriculum  Children have	Strong image of the child, social from birth, full of intelligence, curiosity and wonder.  Based on relationships  Children communicate and

	constructive and creative play, and oral language story and song. Also emphasizes imagination, literature, folktales, natural science, practical crafts, foreign languages, art, and music.	freedom to choose activities in their carefully prepared environment. Activities might consist of a sequence of self-correcting materials in areas of practical life, sensorial, mathematics, language, science, geography, music and art.	represent ideas through the “hundred languages,” i.e. words, movement, drawing, painting, shadow play, sculpture, collage, and music. Use an emergent curriculum for long-term, open-ended project work that encourages inquiry through collaboration
	Children learn through imitation		
Teacher’s Role	Performance role, leads or models whole group activates.	Unobtrusive director, encourage confidence and independence	Artful balancing between engagement and attention often encouraging exploration through different media
	Brings a spiritual element to teaching	Provide a calm atmosphere	Scaffold children’s learning
	Moral leader promoting a sense of harmony	Demonstrate how to use materials and introduce activities based on individual child’s needs	Set up provocations to encourage exploration and problem solving, usually within small groups
Assessment	Portfolios	Portfolios, teacher reflection, and review of multi-media projects	Portfolios or memory books  Documentation of children’s work that shows their ideas, theories, and understandings.
Philosophical aspects that	Homelike, beautiful, natural	Encourages peace education	Encouragement of relationships

---

compliment sustainability	materials	between teachers, children, parents, society, and the environment
	Goal of educating children to create a just and peaceful world	Goal of children becoming seekers of justice, explorers, and problem solvers with cultural knowledge
		A child becomes a creator of culture, rights, and values.

---

Note. *Adapted from:* Edwards (2002) pp. 3-17.

Edwards (2002) notes, Waldorf, Montessori, and Reggio Emilia approaches “represent an explicit idealism and turn away from violence, toward peace and reconstruction. They are built on coherent visions of how to improve human society by helping children realize their full potential as intelligent, creative, whole persons (p. 1).

The project approach is another transformative approach that encourages active and engaged learning (Helm & Katz, 2010). Children are encouraged to explore topics that are of interest to them as the project approach allows for children to have some autonomy over their own learning through child-initiated investigations (Helm & Katz, 2010). This approach also encourages children to take action and solve problems (Helm & Katz, 2010). Additionally, the project approach has a history of being utilized to connect children with nature while learning ecological terms and systems (Helm & Katz, 2010). The project approach usually follows a series of three phases. These phases outlined by Stuhmcke (2012) include:

Phase 1: Introductory phase

- An ‘interest web’ might be recorded (word and/or picture)
- Questions might be listed – ‘what do we want to know?’
- A list of ‘what we already know’ might be recorded

Phase 2: Synthesizing phase

- In-depth exploration of interest area through a variety of open-ended methods

Phase 3: Culminating phase

- A way of communicating what has been discovered during the course of the project this might involve displaying documentation (p 46).

Researchers agree that Early Childhood Education for Sustainability or education for sustainable development is about teaching sustainable values and encouraging children to become active participants in the sustainability movement (Davis, 2014; Didonet, 2008; Hagglund & Johansson, 2014; Johansson, 2009; Kemp, 2005). Icelandic researcher Norddhal (2008) argues the preferred way to educate children about sustainability is to give them the opportunity to develop their knowledge of community and nature through experience. Children need to care about and listen to others, and learn to express themselves (Norddhal, 2008). They need to be given the opportunity to develop critical and creative thinking capabilities (Norddhal, 2008). Adults, not children, are responsible for finding solutions to environmental problems but children can be provided with the experience and tools so that they can make good decisions and take the appropriate actions towards a sustainable future (Norddhal, 2008).

### **Early Childhood Education and Sustainability Leadership**

#### **Early Childhood Education Leadership**

Early childhood leaders should be actively involved, lead by example, communicate beliefs and values to others, and give their followers a vision for which to strive (Koraleck, 2005). Leadership in early childhood can include those in a variety of roles including teachers, early childhood providers, administrators, and teacher educators

(Koraleck, 2005). Those leaders assuming director roles can vary in education and level and experience with each state having different childcare licensing laws.

Illinois childcare, licensing for example, requires directors of early childhood programs to have (a) 60 semester hours of college coursework with 18 of those directly related to early childhood; or (b) two years of child development experience and 30 semester hours of college credits with 10 credits related to early childhood; or (c) completion of a credential program approved by the state (Illinois DCFS, 2015).

According to the Illinois Department of Family Services (the governing body that oversees early childhood centers), the role of a director is to be responsible for and oversee all staff, oversee planning of activities for children, provide orientation services for new hires, and ensure that all staff completes the required 15 hours of training each year (Illinois DCFS, 2015).

Although directors are not required to have a degree, their level of education correlates with their ability to appeal to top talent and retain effective teachers in their programs, institute continuous quality improvement, and oversee other areas of program operations (Talon, Bloom, & Kelton, 2014). A director's level of education and training also correlates with program quality; the more educated the director the more likely a high quality program (Talon, Bloom, & Kelton, 2014). Strong leadership is needed in early childhood programs for them to thrive. This is because strong leaders are able to develop a vision and goals for their centers, motivate their staff, develop a culture dedicated to quality improvement, and accomplish a unity of purpose (Talon, Bloom, & Kelton, 2014, p. 1).

## Leadership for Sustainability

**Leadership for sustainability theory.** Sustainability leadership studies and research are at early stages of development as this is a new field of study and interest to researchers. Those who have researched leadership for sustainability agree that this type of leadership requires leaders who are multifaceted with an expansive set of leadership skills (D'Amato, Henderson, & Florence, 2009; Rogers, 2011). The literature describes leaders involved with sustainability as having characteristics of transactional and charismatic leaders (Waldman, Ramirez, House, & Puranam, 2001; Rogers, 2011). Leaders for sustainability also have the ability to understand systems thinking and complex issues such as sustainability (Rogers, 2011); and are transformational and eco-sensitive (Hanson & Middleton, 2000; Rogers, 2011). Rogers (2011) developed principles required for sustainability leadership (Table 4).

Table 4

### *Principles Required for Sustainability Leadership*

Principle 1: Cognitive development	Principle 2: Knowledge-based leadership	Principle 3: Action-based development and the different frameworks used
Developing a long-term view for decision making	Understanding environmental science	Reducing their ecological footprint
Understanding environmental constraints for organizational operations	Creating ethically sustainable guidelines	The natural step-Consider non-sustainable activities and make a plan to become more sustainable
Seeing resources flow through systems and consequences for organizations	Working intentionally toward sustainability	Natural capitalism-Strive to achieve economic goals without degrading the environment
	Develop systems thinking competency	Industrial Ecology-understanding emergent behavior and the connection between human and natural systems

---

	Cradle to Cradle-also focuses on systems but with a focus on ecologically intelligent design.
	Biomimicry-imitates nature in design elements

---

*Note.* Adapted from Rogers (2011) pp. 141-151

Additionally, leaders for sustainability have a sense of moral purpose and the ability to create order out of chaos (Rogers, 2011). They have a vision that enables them to see the long-term consequences of short-term decisions and thus are more apt to take more deliberative, sustainable actions (Rogers, 2011).

**Sustainability leadership model.** The Sustainability Leadership Institute defines a sustainability leader as “anyone who chooses to engage in the process of creating transformative change with others aimed toward a sustainable future; economically, environmentally and socially” (Ferdig, 2009, p.1). The institute developed the ‘Sustainability Leadership Relational Model’ that outlines sustainability leadership practices. These practices include: (a) take responsibility, (b) look for holistic interconnections, (c) convene constructive conversations, (d) embrace creative tension, (e) facilitate emerging outcomes, (f) understand social change dynamics, (g) experiment, learn and adjust, and (h) expand conscious awareness.

*Take responsibility.* Leaders take responsibility by making sustainability relevant to others. They use strategic planning to develop sustainable ideas that are relevant to their business’s short and long-term goals (Ferdig, 2009). Leaders also “make things happen” (Ferdig, 2008, p.1) by understanding how to approach sustainability initiatives, and how to collaborate with others on creative strategies and solutions. Leaders also initiate change and conversations on how to implement change in their organizations

(Ferdig, 2009). Part of taking responsibility for sustainability also includes sustaining momentum by discovering ways to nourish their own energy and drive. Leaders can achieve this by encouraging practices such as reflection and professional development; these can increase the momentum going for their business as a whole (Ferdig, 2009).

*Look for holistic interconnections.* Sustainability leaders should seek to understand the interconnectedness and relationships among what may seem to be independent units or events (Ferdig, 2009). They use systems thinking to understand how a decision may impact each part of their organization, their stakeholders, their local community and the planet (Ferdig, 2009; Rogers, 2011). Sustainability leadership is also about assembling and strengthening resources for the most advantageous results (Ferdig, 2009). They build partnerships that aid them in attaining resources that support sustainable development (Ferdig, 2009).

*Convene constructive conversations.* Leaders create a culture that encourages brainstorming for innovative solutions to problems (Ferdig, 2009). They ask questions that provoke thought and encourage others to participate and share their ideas, always welcoming different perspectives (Ferdig, 2009). Sustainability leaders also build strong, authentic, relationships and partnerships (Ferdig, 2009). They connect with outside resources to build partnerships that are synergistic in supporting sustainability efforts (Ferdig, 2009).

*Embrace creative tension.* Sustainability leaders should invite and encourage a wide range of diverse view points while trying to come up with collective solutions for the greater good (Ferdig, 2009). They understand the creative tension created by the interaction of power relationships when soliciting support from others needed for

learning and success (Ferdig, 2009). Additionally, leaders understand that tension can lead to a creative shift in mindset and greater understanding (Ferdig, 2009).

*Facilitate emerging outcomes.* Leaders dedicated to sustainability continuously assess their opportunities and risk associated with sustainability initiatives and projects (Ferdig, 2009). These leaders should also assess the risk of *not* perusing each possible sustainability strategy (Ferdig, 2009). Sustainability leaders should be able to let go of control and the idea of certainty of outcomes. These leaders must work with others to face uncertainty and the unpredictability of outcomes. They work with others to produce new strategies or solutions when a first attempt fails (Ferdig, 2009). Sustainability leaders are able to work within a flexible strategic framework (Ferdig, 2009); they work with others to co-construct rules and protocols and encourage joint accountability.

*Understanding social change dynamics.* Sustainability leaders understand people. These leaders should understand how diverse groups of people cope with change when new ideas are frequently launched in the work place (Ferdig, 2009). Sustainability leaders have a keen understanding of people, both individually and in groups. They understand the behaviors that are resistant to change and they form and implement strategies to interrupt them.

*Experiment, learn and adjust.* Leaders should adapt and use sustainability frameworks such as The Natural Step and Natural Capitalism (Ferdig, 2009). Sustainability leaders should learn through experimentation and be willing to try new ways of doing business or approaching problems. They should also use a reflective practice to learn from past initiatives (Ferdig, 2009) Sustainability leaders should practice

transparency, letting others know how and why decisions are made. They should also invite others to participate in the decision making process (Ferdig, 2009).

*Expand conscious awareness.* Sustainability leaders should lead in a way that is grounded in their own personal integrity. They should have a clear understanding of their own intentions and goals and then practice transparency when communicating their identity, principles, and intentions to others (Ferdig, 2009). Finally, Ferdig (2009) emphasizes the importance for sustainability leaders to exercise authentic interaction with others through actions and dialogue; to encourage joint reflection on the past and present and that reflection should inform the future.

### **Leadership and Early Childhood Education for Sustainability**

Literature on the role leadership plays in Early Childhood Education for Sustainability (ECEfS) is scarce. However, there are a few articles published by Australian and Finnish researchers that touch on this topic. Australian researcher Elliot (2010) emphasizes the importance of the role of people when implementing sustainability and changes for sustainability in an early childhood center. According to Elliot (2010) changes for sustainability in early childhood centers will most likely occur when:

- (1) Strong advocates for sustainability act as mentors and role models and provide inspiration for others;
- (2) Individuals work in responsive and collaborative ways such as that a collective responsibility is demonstrated;
- (3) Action and leadership on sustainability issues is facilitated by any participant (child, staff, or parent) in the early childhood community;
- (4) Participants have shared values, but also respect differences (p. 36).

Australian researchers Davis and Gibson (2006) also focus on change theory in their report of an in depth qualitative study of the “rationale and key processes” of the *Sustainable Planet Project* at an Australian early childhood center (p. 93). The *Sustainable Planet Project* started in 1997 as a result of a team building exercise where teachers worked on a project that had a shared purpose. Teachers picked small projects based on their own interest as part of the bigger *Sustainable Planet Project*. Small projects included litter-less lunches, composting, reusing/recycling, vegetable garden, and environmental aesthetics among others. Children and their families also got involved with their teachers’ small projects. Over time these small projects became part of every day life at the center and more projects emerged. The center’s culture had developed an environmental ethic (Davis & Gibson, 2006).

Davis and Gibson (2006) report on the change processes that occurred over time. According to Davis and Gibson (2006), change processes resulted in the culture of the early childhood center changing to one that, at its core, valued sustainability. The Australian researchers looked at the change processes that occurred during the *Sustainable Planet Project* through the lens of chaos-complexity theory. According to Davis and Gibson (2006), within the chaos-complexity theory paradigm, schools and childcare centers are not stable, rigid organizations but are complex and adaptive. Change does not occur quickly but evolves slowly overtime, and is informed by the traditions and history of the organization, combined with the people and their interactions and relationships (Davis & Gibson, 2006).

Davis and Gibson (2006) found that changes occurring through the *Sustainable Planet Project* had characteristics of what chaos-complexity change theorists view as

successful changes, resulting in lasting organizational progress. Leaders of the *Sustainable Planet Project* introduced small, slow changes that over time resulted in revolutionary change of the center. Leaders at the center also created a culture where there was a shared sense of ownership over the project (Davis & Gibson, 2006). All staff members were viewed as leaders. Additionally, each staff member at the early childhood center had the power to implement changes (Davis & Gibson, 2006). The combination of introducing small changes over time and involving others at every level possible resulted in the entire culture of the center changing. Over time the centers' values, pedagogy, curriculum, teacher's behaviors, and relationships all evolved as part of deep organizational change (Davis & Gibson, 2006).

A Finnish study moves away from change theory and focuses on what Finnish educators value about sustainability (Salonen, & Tast, 2013). The study reports results from a mixed methods design with 145 participants, all Finnish early childhood educators. The data reports what the educators value about sustainability, and what they view as the main obstacles to a sustainable lifestyle. This study concludes that the most important aspects of sustainability for their participants were (a) supporting the community, (b) social responsibility of the consumer, and (c) recycling, composting, and taking care of hazardous waste. The educators reported the biggest challenges with a sustainable lifestyle were (a) lack of time and information, (b) the higher cost of sustainable choices, and (c) the inconvenience of the sustainable way of life (Salonen, & Tast, 2013, p. 70).

### Summary

Sustainability is a critical issue that has universal impacts with grave consequences for children and future generations (Davis & Elliot, 2014). Early Childhood Education for Sustainability (ECEfS) is a fairly new phenomenon and topic for research, and foreign authors have published much of the research. The United States is behind on contributing to this field of study even though the number of schools in the U.S.A. adapting a sustainability focus are growing. Early childhood education for sustainability is about making transformational changes that result in more sustainable practices (Davis, 2014). Some education models that can result in transformational changes in their students include: Waldorf, Montessori, Reggio Emilia approach, and The Project Approach.

Sustainability leadership theory, a relatively new field of study, states that sustainability leaders have a versatile set of leadership skills including but not limited to: eco-sensitivity, understand systems thinking, transactional, and they are charismatic (D'Amato et al., 2009; Hanson & Middleton, 2000; Rogers, 2011; Waldman et al., 2001). Furthermore, The Sustainability Leadership Institute developed the 'Sustainability Leadership Relational Model' that outlines sustainability leadership practices. These practices include: (a) take responsibility, (b) look for holistic interconnections, (c) convene constructive conversations, (d) embrace creative tension, (e) facilitate emerging outcomes, (f) understand social change dynamics, (g) experiment, learn and adjust, and (h) expand conscious awareness (Ferdig, 2009).

There are very few published studies on the role of leadership and Early Childhood Education for Sustainability. The studies that have been published cover

topics on change theory in relation to ECEfS (by Australian researchers), and what educators value about sustainability (by Finnish researchers). Australian researcher Elliot (2010) argues changes for sustainability in an early childhood center will most likely occur when: (1) Strong advocates for sustainability act as mentors and role models and provide inspiration for others; (2) Individuals work in responsive and collaborative ways such as that a collective responsibility is demonstrated; (3) Action and leadership on sustainability issues is facilitated by any participant (child, staff, or parent) in the early childhood community; (4) Participants have shared values, but also respect differences (p. 36).

Australian researchers report on a qualitative study that looked at a major cultural change in an early childhood center that occurred over several years. The school adopted small sustainability focused changes over time that resulted in a revolutionary change of the school. The combination of introducing small changes over time, and involving others at every level possible, resulted in the entire culture of the center changing. Over time the center's values, pedagogy, curriculum, teacher's behaviors, and relationships all evolved as part of deep organizational change (Davis & Gibson, 2006). Finnish researchers found in their study that Finnish educators value most about sustainability: (a) supporting the community, (b) social responsibility of the consumer, and (c) recycling, composting, and taking care of hazardous waste. The educators reported the biggest challenges with a sustainable lifestyle were (a) lack of time and information, (b) the higher cost of sustainable choices, and (c) the inconvenience of the sustainable way of life (Salonen, & Tast, 2013).



## CHAPTER THREE: METHODOLOGY

**Introduction**

An increasing number of early childhood centers are focusing on sustainability as part of their curricula and pedagogies. However, leaders are not publishing their experiences (Davis, 2009; Davis, 2014). This dissertation uncovered leadership traits and leadership experiences of three early childhood leaders, from the Midwestern United States, who lead schools that demonstrated sustainability principles. A qualitative multiple case study was used to answer the central research question and three sub questions. The central research question was; how do early childhood leaders who lead centers that demonstrate sustainability principles, describe their role in implementing the following principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace? Sub research questions included topics on leaders personal connection to sustainability, the application of sustainability, and reflections and lessons learned.

A multiple case study was chosen because it is the appropriate method for answering the research questions (Baxter, & Jack, 2008), for understanding a phenomenon that little is known (Creswell 2014), and for a study in the education field that wishes to improve practice (Merriam, 1988). Purposeful sampling was used to identify participants, and three participants agreed to participate in the study, all of which lead schools that demonstrated all four of the sustainability principles. Instrumentation, the researcher's role, procedures, data analysis plan, reliability and validity, and ethical considerations were all discussed.

**Purpose Statement**

The purpose of this multiple case study was to explore leadership traits and leadership experiences of leaders from Midwestern United States private early childhood centers that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

**Aim of the Study**

The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

**Research Questions**

Research questions were developed based on the purpose and aim of the study. The following research questions guided this qualitative multiple case study:

**Central research question:** How do early childhood leaders who lead centers that demonstrate sustainability principles, describe their role in implementing the following principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (c) democracy, non-violence, and peace?

**Sub research question #1:** How do early childhood leaders who lead centers that demonstrate sustainability principles describe their personal connection to sustainability?

*Sub research question # 2:* How do early childhood leaders who lead centers that demonstrate sustainability principles describe their experiences with the application of sustainability in their centers?

*Sub research question #3:* How do early childhood leaders who lead centers that demonstrate sustainability principles describe their reflections and lessons learned with early childhood education for sustainability?

### **Research Design**

A qualitative multiple case study research design was used to collect data from leaders and at three private early childhood centers, demonstrating principles of sustainability, in the Midwestern United States. Sustainability principles include: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. A qualitative case study approach was the best method to answer the research questions. Baxter and Jack (2008) note case study research is the most appropriate method for answering “how” and “why” type questions. Additionally, Roberts (2010) notes qualitative research is appropriate for understanding any phenomenon about which little is known. Because leadership traits and leadership experiences, of early childhood leaders involved with sustainability has not been researched, a qualitative approach was appropriate. Denzin and Lincoln (2011) note qualitative researchers look to the natural state of things and what meanings people bring to them. Their observations of the world are stated in various ways such as photographs, recordings, notes and interviews (Denzin & Lincoln, 2011). Additionally qualitative researchers interpret their observations for others in order to make the world more visible and understandable (Denzin & Lincoln, 2011).

According to Merriam (1988) a qualitative case study method is particularly appropriate for researchers in the education field who wish to improve practice by finding understanding in a case or cases. Creswell (2014) notes a case study is a design used when a researcher desires to develop an in-depth analysis of a case or phenomenon. A multiple case study allows the researcher to study multiple cases with one phenomenon. This design allows the researcher to discover variations within and between cases and discover similarities between cases (Baxter & Jack, 2008). Furthermore, Stake (1995) notes multiple case studies provide the opportunity to maximize knowledge by studying multiple realities.

A strength of the case study approach is that it requires data to be collected from a number of sources from each individual case (Merriam, 1988). This study used data from interviews, observations, and other artifacts provided by each participant. Baxter and Jack (2008) note, with a case study approach a variety of data sources are used to explain a phenomenon allowing for its multiple facets and complexities to be revealed and understood.

Merriam (1988) developed a synopsis of case study characteristics derived from research theory. Case study characteristics embraced by this study included: holistic and lifelike, illuminates meaning, conversation style format, thick rich descriptions, used to remedy or improve practice, flexible design, description of key issues, suggest solutions, inductive, descriptive, multiplicity of data, particularistic, and specific (Merriam, 1988, p. 12). This multiple case study embraced all of the aforementioned characteristics. Additionally, by studying multiple data sources from multiple cases, descriptive findings

were developed which emerged from an inductive process that allowed for themes across cases to become apparent (Creswell, 2007; Merriam, 2009).

### **Participants**

Purposeful sampling, also known as criterion-based sampling, was used to gain participants for this study. Purposeful sampling is appropriate when one wants to gain insight into a specific phenomenon (Merriam, 1988). The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Therefore purposeful sampling was used to identify participants who lead early childhood centers that demonstrated sustainability principles. The practice of purposeful sampling required that the criteria or standards for units to be included were established then samples were found that matched the criteria (Merriam, 1988). Seven early childhood centers in the Midwestern United States were identified based on published materials on their websites that illustrated all or some of the sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

Initially, an Internet search was used to identify possible schools using search terms that correlated with each sustainability principle. Examples of search terms included: (a) green school, (b) eco-friendly, (c) social give back, and (d) peace education. Once schools were identified a coding system was used to identify which sustainability principles each school demonstrated based on information from their websites. The codes used were P1, respect and care for the community of life; P2, ecological integrity; P3, social and economic justice; and P4 democracy, non-violence and peace. Out of the seven

centers identified and contacted, three participants from three different centers agreed to participate. All three participants lead schools that were identified as demonstrating all four sustainability principles through the coding system.

### **Instrumentation**

Qualitative data tools (Appendix A) and (Appendix B) were developed for the purpose of this Dissertation in Practice. Interview questions were developed that were appropriate for gathering data that answered the research questions guiding this study. Some of the questions from Appendix A were adapted from Hughes & Hosfeld (2005) who developed interview questions for the purpose of discovering cooperative leaders' experiences with sustainability, leadership styles, lessons learned, and the next steps for them in regards to sustainability. The second data collection tool (Appendix B) was used to record observations.

### **The Researcher's Role**

Qualitative researchers are considered to be a data collection tool because of their role in the data collection process. Researchers conducting a qualitative study are considered "a key instrument"; it is their role to gain access to participants, interview participants, make observations, and examine artifacts (Creswell, 2014). This qualitative, multiple case study required significant leadership skills. For example, the nature of the multiple case study required interviews of several different people, which required leadership skills and professionalism. Research skills were required to make the interviewees comfortable and willing to share information on their roles as leaders. Additionally, research skills were used to gain the trust of the participants and ask probing questions. Part of the researcher's role in this study was to transcribe all

interviews. The processes of personally transcribing the data lead to an intimate understanding of the material. Finally, the researcher's role included interpreting, analyzing, and reporting the data.

### **Procedures**

Data were collected at each of the three sites through interviews with school leaders and observations made about their school. Leaders were asked to give a tour of their school prior to the interview. During the school tour, notes were taken on the physical space and any artifacts that support sustainability principles were collected. Photographs of the school were also taken with permission from the school leader. Interviews were conducted in a space comfortable for the interviewee. All interviews were recorded with a digital recorder and transcribed later by the researcher. Additionally hand written notes were taken during the entirety of the interview along with notes about the physical space that were relevant.

### **Data Analysis Plan**

The following detailed plan was used during the analysis process to add validity to the study. The following plan (Table 5) provided a step-by-step guide to analysis during the data analysis phase. Each case was first analyzed individually and then as a group to uncover themes across cases.

Table 5

#### *Data Analysis Plan*

- 
1. Read all transcripts and record initial ideas.
  2. Pick an initial document and look for substance, and meaning and write down thoughts. Repeat with all transcripts.
  3. Make a list of the topics. Cluster similar topics. Put these topics into three categories: major topics, unique topics, and leftovers.

- 
4. Go back to the data with the list of topics. Turn topics into abbreviated codes and write the codes into the text.
  5. Turn topics into categories using descriptive words. Simplify the number of categories by grouping together topics that are related.
  6. Finalize abbreviations for categories and alphabetize codes.
  7. Take the data that correlates for each code and put it in one place for analysis.
  8. If necessary recode existing data.
- 

Adapted from Tesch (1990) and Roberts (2010) p. 160

This plan, developed by experts in qualitative research, helped with the organization of the data reporting as well as with accuracy in reporting. Additionally, it added reliability to the study because it provided details on how codes and themes were developed.

### **Reliability and Validity**

Reliability of this study was strengthened by providing details for the data analysis procedures. Additionally, data triangulation, thick rich descriptions, and peer debriefing techniques were used to add trustworthiness or validity to the study (Creswell, 2014). Data triangulation is the process of analyzing multiple types of data from each source (Creswell, 2014). This process results in a “coherent justification for themes. If themes are established based on converging several sources of data or perspectives from participants, then this process can be claimed to adding to the validity of the study” (Creswell, 2014, p. 201). Interviews, observations, published materials, and artifacts were all analyzed for data triangulation. Thick rich descriptions were used to provide detailed accounts of the participant’s responses and of the early childhood centers. For example, direct quotes from participants were used as often as possible, giving the reader a deep understanding of each participant, and adding to the validity to the study. Finally,

experienced researchers, in the form of a dissertation committee, oversaw the entirety of the study adding validity to this multiple case study.

### **Ethical Considerations**

Proper approval from the Creighton IRB was obtained before contacting any participants. Precautions were made so that educators and children were not disrupted by data being collected at each center. Furthermore, every effort was made to not compromise the leaders', educators', and students' time in any way. All data collected was coded to keep identities anonymous, and pseudonyms were used. Additionally data were stored in a locked suitcase and also scanned into a password-protected computer to assure confidentiality of all participants. Pseudonyms were used and identifying sources were purposely left out to ensure the anonymity of the participants.

### **Summary**

This study used a qualitative, multiple case study methodology with purposeful sampling to collect data from three leaders who lead early childhood centers that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. Two data collection tools, including an interview protocol, and an observation form, were used for this study. A step-by-step guide developed by experts in qualitative research was used to analyze that collected data through coding. Ethical considerations were discussed, and IRB approval was granted before collecting any data. Throughout the dissertation process, leadership and research skills were used, as the researcher played the role of a data collection tool by conducting interviews, making observations, and analyzing all of the data. Techniques

were used to ensure reliability and validity and included a detailed data analysis procedure, data triangulation, thick rich descriptions, and peer debriefing.

## CHAPTER FOUR: RESULTS

**Introduction**

Depleting natural resources, air and water pollution, and increased greenhouse gases, have resulted in many becoming interested in living a more sustainable way of life (Elliot, 2010). As a response to global concerns for the future, many early childhood leaders are choosing to adopt sustainability principles at their early childhood centers. However, there are very few published studies, world wide, on the role of leadership and Early Childhood Education to Sustainability (ECEfS) (Davis, 2014). This study aimed to add to this under researched field of study by describing leadership traits and leadership experiences of leaders involved with ECEfS. Three leaders from Midwestern early childhood centers participated in this multiple case study.

A case-by-case report was used to describe each of the three cases individually. Research questions developed for this study served as the foundation for the interview protocol (Appendix A), which was used to organize the data for each case. The central research question was; how do early childhood leaders who lead centers that demonstrate sustainability principles, which include (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace, describe their role in implementing those principles? Sub research questions included topics on personal connection to sustainability, the practical application of sustainability, and reflections and lessons learned from leaders who lead private early childhood centers that value sustainability. Each case report covered the data that corresponded to aforementioned research questions in a narrative structure that was

appropriate for this multiple case study (Stake, 1995). A cross-case analysis was used following the case-by-case report to produce themes across cases (Merriam, 1998).

### **Purpose Statement**

The purpose of this multiple case study was to explore leadership traits and leadership experiences of leaders from Midwest private early childhood centers that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **Aim of the Study**

The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

## **Summary and Presentation of the Findings**

### **Data Analysis Procedures**

Data were first collected through face-to-face interviews, which were recorded and later transcribed. Follow up phone conversations took place after the initial interview. This provided the participants the opportunity to add any information that they felt was left out and also gave me the opportunity to ask any questions that I had after reviewing the data. Interview transcriptions; observation notes and photos; follow up phone conversations; artifacts collected from the participants (parent handbooks, parent handouts, and employee handbooks); and participant's school websites were all evaluated

in relation to the interview questions (Appendix A). No discrepancies were found between any of the data for any of the three participants.

Each participant's data were described individually from each question in the interview protocol (Appendix A). The data collected from the first face-to-face interview was first reviewed, followed by the participant's school website, publicly published information on the Internet. Lastly, any handouts provided by the participant were reviewed. The information provided by the participants was consistent with other data sources in all cases. A robust description of findings was reported for each individual case in a case-by-case report. A synthesis of findings from a cross-case analysis was later completed.

### **Organization of Data and Findings**

Data were described using narrative style and each case was presented individually. Each case description starts with information on the early childhood center where the participant leads, followed by headings for each overarching theme extracted from the research questions for this study. Those themes were personal connection to sustainability, practical application, sustainability principles, and reflections and lessons learned. Sub themes were derived organically from the data collected about each overarching theme.

### **Case-by-Case Report**

#### **Case 1: Carly.**

Carly's school was located a few miles from the downtown area of a major Midwestern city. The school was located in an urban neighborhood where some of the

buildings were single- family homes and the others had been homes now converted into buildings for commercial use. An artifact from Carly's school revealed:

Because of the widening disconnection between children and nature, founders felt compelled to do what they could for their own children and their neighborhood.

The vision for [the school] grew from this belief. Together they wanted to find a way to grow environmentally conscious children by connecting them to their natural environment through creative play and exploratory activities.

Upon arriving I was able to park directly across the street. As I waited for my appointment, young children started streaming out of Carly's school, bundled up in winter clothes. I watched the children walk to a nearby open lot just two lots away from the school. As I approached the school, I noticed that its ecological name was made out of tree branches on a sign that hung above the entrance.

I rang the buzzer and was quickly welcomed by a young outgoing woman who introduced herself as the director of the school, Carly. Upon entering the school it felt very much like entering a home. I noticed a few materials for children to work with, such as a child's size kitchen. Almost all of the materials were made of wood, and it was clear that the design was inspired by earth elements with neutral tones. At the center of the large room was a fully equipped kitchen. Carly introduced me to the cook in the kitchen and explained that they cook all of their organic snacks and meals on site. She further explained that the children often help with cooking and cleaning. Carly's school was not a home day care; however, Carly and the owners valued a "home-like environment in which to foster children's gradual, healthy growth and learning."

Carly explained that the school is small with only two classrooms with mixed aged students. The classroom at the front of the school served the youngest students ages 0-2 and the back classroom had students who were ages 2-4. An artifact from the school revealed this pertinent information: “The center groups mixed-age children together to provide them the opportunity to grow up in a ‘family-style’ environment that looks, acts and feels like home.” After the tour of the school, Carly and I sat down and I interviewed her about her leadership traits and leadership experiences with Early Childhood Education for Sustainability (ECEfS).

### **Personal connection**

Carly revealed that she first became involved with early childhood education in high school where she took childcare classes. Carly reflected,

I was lucky enough to have a high school that offered childcare classes that I could take, some of them counted towards college credits and um, I was doing well in that class so I was asked to do an after school work opportunity at a local daycare, so I started working in a daycare just in the afternoons.

After high school, Carly continued to work at early childhood centers, she explained that she had worked at several “mainstream” or chain early childhood centers over the years but never felt like they were right for her because of her beliefs and values. She further explained that she felt lucky to have found the school where she is currently the director because they have the same values.

Carly’s biography on her school’s website described her passions, values, and education as follows:

[Carly] has been working as a childcare professional for 10 years and is very passionate about healthy, natural, and sustainable living and teaching those values to the next generation. An avid gardener and wildlife enthusiast, she is currently taking coursework to become a Wisconsin Master Naturalist. [Carly] also has a deep interest in wild edibles and spends her springs, summers, and autumns searching for forest foods. She enjoys folk herbalism and collecting and storing herbs from her own garden. She has her Associates Degree in Early Childhood Education and a Registry Credential in Infant/Toddler Care.

Carly choose to work at her current school because it is a place she “can feel comfortable” and a place she “can feel good about.” Her school’s mission states: “ [We] instill the love for nature in our children, by supporting their natural growth in a home-like, healthy and sustainable environment.” This mission correlates with Carly’s own values and interest, which made it a good fit for her and her career.

Carly further expounded on why she chose a school that demonstrated sustainability principles by explaining that she has always been interested in “our food system” and “the systems that we have.” She explained that she first started getting involved with sustainability in her early twenties. Carly noted,

I started to realize that our activities are taking a huge toll on the environment, not just the human environment but ecosystems all around the world so I just became very interested in that and I think I took it my approach was mostly food based, trying to figure out how we can have a healthy food system.

Carly explained that she found her current school in February 2014 shortly after they opened. She further explained being drawn to the school.

The owners who started the place were very interested in sustainability, non-toxic chemicals, good food, and us being as energy efficient as possible, so I felt like that was a good place to be. I felt like working at a place where people were like-minded as opposed to always constantly fighting other battles in other places.

Carly explained how she first got involved with ECEfS.

I became concerned about the food that was being served at other early childhood centers and I was like this is not only not sustainable for the earth but a child should not be living off this kind of food that's not sustainable for a body.

She went on to explain that when she started working at her current school she was around "like minded people" and she developed a deeper understanding on the role early childhood can play with sustainability.

**Sustainability in early childhood.** Carly discussed that she believes it is important to introduce sustainability during the early years because "we are raising the next generation."

She explained that when she was growing up "sustainability was not really talked about in terms of what are we doing to our land base, what are we doing to our soil, our water, our air, that was never talked about." Carly expressed that she wants to teach young children these concepts without causing them anxiety. She alluded that she does not take a "doom and gloom" approach. Carly expounded on her ideas by saying

I think it can be something as simple as we don't squish bugs, simple things like putting out bird food for the birds so there is this understanding that there are other creatures on this planet that use the earth, and that to be cognizant of that; and I think the earlier the better"

**Defining sustainability.** I asked Carly what sustainability meant to her. She confessed that sustainability “can mean a lot of different things” but to her sustainability is about doing something that doesn’t just take but gives; “equally back into the system or contributes something,” she went on to explain, “it can even be regenerative.” Carly further expounded on her position with an example stating;

You can keep plowing a corn field and keep adding synthetic fertilizers to it but and that might be sustainable as long as the fertilizer doesn’t run out but its not regenerative. We’re not building soil were not actually building, you know, anything.

**Initial goals.** Carly started working at her school only a few months after they opened. Her first goal was to start a garden and a compost for the school’s vegetable scraps. Upon reflection, Carly noted that she started these initiatives, but that she had a lot of help from the school’s cook and other staff. She confessed that it was “a big group effort.” Carly also had questions that helped direct her during the first few months:

“How can we approach childcare in a way that is sustainable?”

“How can we approach childcare in a way that we are teaching children to respect the land base, and respect the bugs, and the animals, and enjoy healthy food that is organic?”

**Future goals.** Carly would like to start a “nature Kindergarten” at the school. She described this as a program where children would come to her center and spend the entire day outside. Carly envisioned; “students would eat snack outside, children would build with materials that were outside, we wouldn’t bring anything in. They would be able to

use hammer and nails and build shelters and use sticks and that kind of thing.” Carly also expressed that she wants to expand their gardening program. She stated:

I would like to get permanent raised beds in the backyard to do more gardening, also there is a vacant lot on the corner there and I would like to a get a little bit more land to grow more food and if its possible I’d like to get some chickens back there and the worm composting system and the worms can be feed to the chickens.

### **Practical application**

**First steps.** While discussing the first steps, the owners and Carly took when bringing sustainability to their school, Carly explained that the school was designed with sustainability in mind. Carly informed me that the owner worked for a nonprofit organization that would find homes that had been broken down and renovate them with recycled materials and solar panels. The owners had this kind of renovation in mind when they found the space they thought would work for an early childhood center.” Recycled materials were used in the design of this space that turned an old bar into what is now a small early childhood center.” Moving beyond the physical space Carly explained:

The first thing that came to everyone’s mind when we were thinking about how the school was going to work was organic foods. How are we going to get good foods in here that are healthy and organic? So that was the first thing and naturally that flows into stuff like gardening. How can we get foods from our own backyard? That was the first thing.

**Engaging others.** Carly was asked how she engages others with sustainability initiatives. She explained that most of the staff that had been hired had “already been in

that mindset.” According to Carly, she and other staff learn from each other. Also, when a new person is hired they look at it as a learning opportunity to learn new information. Carly explained, “I find more depth to the issue, or you know, I find out that this is how someone else functions in their life, and this is how they maybe see sustainability.”

Carly’s school has earned two certifications, The Eco-Healthy Childcare, and Go Green Rating Scale. Both of the certifications require the school’s staff to participate in professional development on environmental issues and early childhood. However, Carly confessed that she and her staff don’t find their professional development particularly enlightening or helpful. Carly explained;

Basically all of the staff is already educated on the topics. Not that we can’t ever learn anything, but a lot of it is surfacy stuff like changing out light bulbs and putting things in recycling and I think we are all, as a staff, past that.

Carly has made efforts to engage parents with sustainability and reported that these have been successful. A resource tab was added to the school’s website to give parents information on “Nature Play” and natural maternity resources for expecting mothers. Carly has also sent out emails to give parents ideas on how to live a more sustainable life. She gave the following example of an idea she has given parents to help them make more sustainable choices. “Take a peak on Craigslist there is always used winter gear you don’t have to buy brand new every year.”

**Leadership.** Carly’s leadership style is one that involves others at every level possible. She described herself as a leader that doesn’t “like to function in a top down way.” Carly further explained, “My staff and me, we are a team and I don’t make decisions for them, I ask them their opinions.” When Carly, or someone on her team,

comes up with an idea they all discuss it together. “As an entire team we talk about the pros and cons and if that’s what we want to do, and who is going to take care of it.” Carly mentioned that she has to make a lot of administrative decisions, but that she still involves others when possible. She gave the example of when she needs to send out an email to the parents she will ask another staff member to proof read and give their input. Carly explained, “We work very closely, which I think is very healthy and I think that that’s why this place functions so well.”

Carly was asked, “How would the educators at your school describe you as a leader?” She replied that she believes they would say she is a “team player,” she includes everyone in making decisions, and that she does not work from the top down. She also thought they would say she is an idealist. Carly explained, “I have things that I think are very important. Sometimes people will stop and correct me and say it’s just not possible, but again I think it’s important to have those ideas and have those aspirations.” Carly was asked to reflect on how her leadership traits have contributed to her leading a school that values sustainability. She responded,

I think you have to have a passion for it. It’s not just a job its not just my position it’s actually something that I find really important so I will do my hardest, most of the time, to make sure if there is something when it comes to children or sustainability, most of the time I will make it happen. I have a very strong passion about it so I think that that’s really important. You know, I don’t do things arbitrarily I do things that are meaningful.

Carly described the perfect leader for Early Childhood Education for Sustainability as someone who is honest, flexible, and patient. She emphasized that they

need to have goals and be realistic about their goals. Carly believes leaders for ECEFS should have the understanding that often times sustainability initiatives might not be able to happen immediately and that it is important to have patience.

**Daily schedule.** Carly spends her mornings working in the classrooms with the children. She explained, when the children get to school they work with the materials in their rooms freely until morning snack. Carly helps serve the children snack and she participates in a community blessing that “thanks the earth for the food.” After snack she helps take the children outside where they spend most of their time until lunch. Carly leaves the class and goes to her desk to do administrative work mid morning. She explained that she has “dual roles” as a teacher and a director.

**Curriculum.** Carly and artifacts from her school, described the curriculum used as “Inspired by Waldorf, Reggio Emilia, and Montessori philosophies, with an emphasis on outdoor activities, environmental awareness, sustainable gardening and explorative art activities.” I asked Carly how she and the other teachers involved children with sustainability. She explained with the following statement:

This overall idea is respecting the earth, so when we go on a walk or a hike if we find a dead mouse we obviously don't touch it, but the caregivers will use some sticks and will bury it under some sticks and some leaves and we will say thank you to the mouse for all the hard work she's done, and um just this idea of reverence for other humans other beings around us. We use this whole idea of using natural toys, the plastic things we are not about, we are using sustainable renewable sources for our toys. Also, the idea of simplicity is very strongly in us. We don't think that it's necessary to have a hundred or so toys a few toys is all

you need. Simplicity is in important when we are talking about sustainability, how much do you really need, and also the food is a big focus for us.

A large part of Carly’s school’s curriculum took place outdoors in natural learning environment. An artifact from the school explained; “we embrace nature as our teacher and practice practical life skills throughout our daily rhythms”.

### **Sustainability principles**

The Earth Charter identifies four sustainability principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. Table 6 shows each sustainability principle with corresponding evidence of *some of the ways* Carly’s school demonstrated each principle.

Table 6

#### *Sustainability Principles And Demonstration From Case 1.*

Sustainability principle	Supporting evidence
Respect and care for the community of life	<p>“We foster this idea of reverence for the earth and all the other beings on it”</p> <p>“We instill the love for nature in our children”</p>
Ecological integrity	<p>Composting</p> <p>Recycling</p> <p>Organic Gardening</p> <p>Serving organic food</p> <p>“We embrace nature as our teacher”</p> <p>“[We] grow environmentally conscious children by connecting them to their natural environment through creative play and exploratory activities”</p>
Social and economic justice	<p>“We live in a very diverse neighborhood to diversity is something the children are</p>

---

	exposed to”
	Spanish program
	“We are trying to bring in different traditions to children. We celebrate different things, sometimes I’ll bring in very earth based worship items and we will have the advent calendar, things like that. Again, we’re trying to bring in different traditions to the children”
	“The idea of simplicity is very strongly in us.”
Democracy, non-violence, and peace	Daily affirmations
	No weapon play policy
	“Foster a sense that we are all in this together”

---

### Reflections and lessons learned

**Obstacles.** Carly believed that the biggest obstacle she had with sustainability at her school was a lack of space specifically in her school’s yard where she wanted room to grow more food. Carly also mentioned that an obstacle had been finding money in the budget to afford things like organic food. I asked Carly if there was any kind of resource or outside help that would be helpful. She responded, that an “all inclusive resource” would be very helpful, one that would help them fund sustainability initiatives, help find organic food, and also connect them to other schools that focus on sustainability.

**Benefits.** When asked about the benefits sustainability had brought to her school Carly explained, “Our waiting list is huge!” Carly pointed out that being a center that focused on nature and sustainability had been a huge attraction to area parents. She confessed that she wished she had somewhere to refer parents, who are interested in sending their children to this type of school; “We have a huge waiting list so I’d like to be

able to refer people to other schools that are like minded. I think it be great to have an organization that helped with this and with grants.”

Carly described her biggest successes with sustainability; “The attraction that it brings and the partnerships that we are able to form with certain other places that are doing things. We have partnerships with The Urban Ecology Center and Escuela Verde which is really great!” The Urban Ecology center was within walking distance from Carly’s school, and was a place where have learned about ecology and science through games and other activities. Escuela Verde was a public charter elementary school that focuses on sustainability through project-based learning.

**Advice.** Carly’s most important piece of advice, for early childhood leaders interested in ECEfS was to ask themselves a series of questions. She said:

Identify your focus for a center. When you’re talking about working with children, what philosophies? How are going to work with children? What are you going to do? Are you going to bring in plastic toys? Are you going to bring in a television? So, really having a very solid idea and guide.

Carly explained that working through these thoughts and developing an identity would help with the hiring process of employees because employees may be attracted to a school “through the beliefs.”

### **Case 2: Becky**

Becky’s school was located in a downtown neighborhood, of a major Midwestern city. As I approached her school, I passed several other businesses including a gym, and a restaurant, as well as single-family homes, and what appeared to be condominiums. As I approached, I noticed a large sign with the school’s ecological name, and a large tag line

under the name reading, “Growing young minds organically.” There were two large windows at the front of the school, which was located in a single story building. I rang the buzzer and waited for Becky to meet me. Upon answering the door, I was greeted by Becky, a soft-spoken middle-aged woman. She kindly shook my hand, and had me follow her down the hall into her office.

Becky’s school had a very spa like feel, with soft tones, and elements that mimic the natural world. We both sat down in the office, a very small office with one built in desk and just enough room for the two of us. The school was rather quiet, children were going down for their naps, and there was little activity in the halls. I started the interview and we began to talk about Becky’s experiences with ECEfS.

### **Personal connection to sustainability**

**Background.** Becky’s parents owned a preschool when she was growing up. She explained, when she wanted to start a business of her own, the preschool business seemed like a natural fit. Pryor to starting her preschool, Becky earned a Master’s degree in computer Science and an MBA. She also worked in IT for many years. She decided to leave the IT world to return to her family’s roots and she started a preschool. Additionally, Becky was drawn to the Montessori approach. She explained,

I had been in IT for a long time, but then I wanted to open a business my natural thing was to look into preschools because my parents own preschools. So growing up I was involved with preschools; and my son went to Montessori school, so it made since for me to open a Montessori preschool.

**Personal value.** Becky explained, it was important for her to start a school that focused on sustainability because she thought of sustainability as one of her own core

values. She also alluded that she thought the parents in the neighborhood of the school value sustainability, and that choosing to be a school that valued sustainably made good business sense. Additionally, Becky believed that by choosing “eco-friendly materials” and an “eco-friendly lifestyle” that she has provided a safer environment for the children in her care. Becky further explained that she feels sustainability, “fits very well with the Montessori philosophy” and her choice to focus on sustainability, “just makes sense.”

The conversation with Becky led to a discussion on what she valued most about sustainability in early childhood. She responded,

I think it's the most important thing is giving them a healthier environment and also teaching them how to treat the earth and each other. They learn things like composting, we compost all the food scraps so they know they put the food in one bin so they get that, and their learning that from an early age.

**Defining sustainability.** I asked Becky what sustainability meant to her and she replied,

For me it means being able to leave less of a footprint on the earth and to make sure you are giving something back, for all of the things that we are taking from the earth. Making sure we are doing things the best way we can, recycling, and trying to use less materials, and trying to use sustainable resources.

Becky went on to explain how she used sustainable design for the physical space of the school,

We've done things like reusing all the doors and the trim, we repurposed it, moved it around, any materials that we could we reused and repurposed it. We also wanted to make sure all the materials we were using were super safe for the

kids, like using no VOC paints. We wanted recycled materials wherever we could. Anything we could use that was recycled we did.

Becky drew from her own personal experiences of being sustainable in her personal life and at her home. She did not follow any requirements from certifying organizations, because she was unaware of this kind of support at the time. However, she did mention that she is now interested in perusing a certification.

**Vision.** Becky explained her vision in regards to sustainability at her schools as follows;

I would love it if we had a playground that we could do more natural materials in and things like that, that is one of the things that we don't get to do, we take the kids out every day and we work with them. They collect materials and things so [a playground] would be nice.

Becky further explained, since her school was located in the city they had to take the children to a nearby park for their outdoor time. Ideally she would have liked to have an outdoor space of her own.

### **Practical application**

**First steps.** When Becky first started the process of starting a school she focused on the build out and finding healthy and safe materials for children and the environment. She explained that she spent a lot of time researching online to find furniture and eco-friendly, non-toxic, materials for her school. This explanation was consistent with information from Becky's school website, which revealed that the children at her school; "[s]pend their days in an eco-friendly environment that is free of toxins. Classrooms are outfitted with light colors and cozy furnishings in eco-friendly, non-toxic finishes."

Additionally the website revealed, “All organic sheets and blankets are used for naps. Organic hand soap and recycled paper supplies are used throughout the facility. Only non-toxic cleaning supplies are used for a healthy indoor environment”.

**Leadership.** Becky was the owner of her school and her main role was to oversee the directors, she handled all the budgeting and finances. Becky also helped the directors set policies, and also helped them “work through issues.” Many days Becky worked from home communicating with her directors frequently. She would travel to her school when she was needed. On the day I visited Becky at her school, she was filling in for a director while that director was on maternity leave.

When asked about her leadership style, Becky explained that she prefers to lead by example for the staff and the children. Becky has found this to be effective and noted that the staff usually “follows along” with her examples. She also explained that she thinks of herself more as a coach than a typical leader. Becky emphasized that she worked *with* her staff to come up with solutions and ideas. She explained she engages her staff with dialogue such as; “here are some ideas, and this is what we could be doing.” She also encouraged her staff to bring her ideas.

During our conversations Becky explained that she was able to engage others with sustainability by recruiting staff members who were already interested in sustainability. Additionally, she explained that the culture of her school is one that welcomed ideas and that the staff had meetings where they were able to exchange their ideas in regards to sustainability and all other aspects of the program. Becky noted, “With the staff meeting together a lot of time, they are trying different ideas from each other, and they are learning from each other.”

Becky was asked how her staff members would describe her as a leader. She responded she thought they would describe her as having a “coaching style.” Becky elaborated, “I work with them to try and help them with certain areas, I don’t usually just give orders, I’m not that kind of leader.” Becky further explained how she lead her school and got her staff on board with sustainability by, “getting them more involved and not just telling them what to do and dictating it. Getting them more involved helps them own their part of it so they learn more.” As the conversation evolved, Becky was asked to describe her idea of the perfect leader for ECEfS. She emphasized, to be a good leader in a school practicing sustainability principles the leader should have had, “enthusiasm for sustainability.” Additionally, Becky believed it was important for a sustainability leader “to be open to new ideas and willing to try new things.”

**Curriculum.** Becky chose to use the Montessori curriculum and philosophy for her school. Her school website explained the Montessori curriculum as follows.

Our curriculum rests on the foundation that children learn best through exposure to the right materials during the sensitive period for each skill. Hands-on activities and in-depth exploration of each material are highly encouraged. Children who are fully engaged and absorbed in a particular topic can spend as much time as they need for mastery. Multi-age classrooms offer opportunities to learn from and support other children, and allow each child to progress at his or her own pace.

Becky explained that the program she has developed for her school “emphasizes healthy living” and “promotes a green lifestyle.” Information from artifacts provided by Becky was consistent with Becky’s explanation. A parent handout provided the following information.

We spend outdoor time at the playground or exploring the neighborhood and beyond through fun, educational field trips. A seasonal organic vegetable garden is planted in containers on the sidewalk to teach the children where their food comes from. Children can participate in flower planting in the neighborhood as well. Art and science areas use natural materials to foster deeper understanding of our world. Our library is filled with books to build young imaginations. Music, yoga, and movement make up integral parts of the curriculum.

Additionally, Becky installed all Energy Star appliances and served organic snacks and meals to the children.

**Sustainability principles**

Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. Table 7 presents each sustainability principle with corresponding evidence from artifacts and interviews with Becky.

Table 7

*Sustainability Principles and Demonstration From Case 2.*

Sustainability principle	Supporting evidence
Respect and care for the community of life	<p>“Promote an eco-friendly environment and a healthy lifestyle that builds strong children and a curiosity to explore their world”.</p> <p>“Develop each child’s social and emotional capabilities so they learn to behave in caring, responsible ways, build self-esteem and enjoy interacting with others”.</p> <p>“Art and science areas use natural materials to foster deeper understanding of our world.”</p>

Ecological integrity	<p>“ We are studying insects and land animals! Each classroom has it's own ladybug habitat where we will watch the pupa go through their chrysalis stage and then turn into ladybugs! We're also making lots of ladybug art!”</p>
	<p>“We are an eco-friendly, healthy environment school, and promote a green lifestyle”.</p>
	<p>“A seasonal organic vegetable garden is planted in containers on the sidewalk to teach the children where their food comes from.”</p>
	<p>“A fully-fitted kitchen with Energy Star appliances provides nutritious yet delicious, organic snacks for the children. An organic hot lunch is brought in daily from a locally sourced caterer. The children are encouraged to participate in helping at meal times and clean-up activities.”</p>
	<p>“Organic hand soap and recycled paper supplies are used throughout the facility. Only non-toxic cleaning supplies are used for a healthy indoor environment.”</p>
Social and economic justice	<p>“We foster a desire to help others in the community through active involvement that teaches the joys of service. Build a circle of encouragement and support to include the child, family, faculty and neighborhood.”</p>
Democracy, non-violence, and peace	<p>“Studying of other continents and cultures”</p>
	<p>“We value diversity and uniqueness in our students and faculty, and always promote respect for each other”.</p>
	<p>“Music, yoga, and movement make up integral parts of the curriculum.”</p>

“We definitely work with the children to be peaceful. We actually have a peace rose or a peace table depending on how they implement it, where they work their differences out; and we teach the children how to behave with each other and their role in society and the classroom; and this is their classroom they take good care of it.”

### **Reflections and lessons learned**

**Obstacles.** Becky revealed that adapting sustainability principles was challenging in the beginning. She explained,

I think some of the challenges early in have been finding materials and equipment and things that fit, that are safer. There is so much plastic out there, even the furniture sometimes, the finishes aren't all that great so sometimes that kind of thing can be a challenge to find the right stuff and still meet DCFS (Department of Children and Family Services) and other requirements. One of the big ones; we do not use bleach here so finding a more acceptable bleach alternative was always a challenge.

Becky further explained that she spent time researching bleach alternatives that were less toxic than bleach. She found that her city allowed three different bleach alternatives; one of them was an iodophor. Becky explained that an iodophor was typically used by brew masters to sanitize brewery equipment. The CDC defines an iodophor as

A combination of iodine and a solubilizing agent or carrier; the resulting complex provides a sustained-release reservoir of iodine and releases small amounts of free iodine in aqueous solution. The best-known and most widely used iodophor is

povidone-iodine, a compound of polyvinylpyrrolidone with iodine. This product and other iodophors retain the germicidal efficacy of iodine but unlike iodine generally are non-staining and relatively free of toxicity and irritancy (CDC, 2008, para 1).

After completing her research, Becky chose to use an iodophor instead of bleach because she felt that it was the safer choice.

Becky made clear that the biggest obstacle she had adapting sustainability principles were the cost. She explained, “It’s more costly using a lot of the materials we use all recycled products, we eat all organic food, so it definitely cost more to supply that.” Becky also explained that “finding things” had been a challenge for her. She reflected on the challenges of serving all organic food and explained that some things that she wanted to serve she could not find organic.

I asked Becky, “If you could use any kind of outside help what would it be?” She alluded that it would be very helpful if there were a program that helped leaders find materials, and provided grant money to fund the purchasing of sustainable materials. She would have liked this type of program to fund sustainable renovations for early childhood centers.

**Benefits.** Although leading a school that focused on sustainability principles had not come without challenges, Becky emphasized that being a school that demonstrated sustainability principles had many benefits. She explained, it was important to her to start a school that represented her own values, and most importantly provided a safe place for young children to spend their day. Becky explained, that by using more sustainable materials, she was providing a safer school for the children and the environment. Becky

also alluded that the parents, who were her customers, appreciated her efforts and that the families she served also valued sustainability, which gave her a marketing niche. Becky expressed that the choice to adopt sustainability principles had made good business sense for her early childhood business. Becky believed, “Its healthier for the children, healthier for the staff, and the families appreciate it, so it’s a good selling point.”

**Role of leadership.** I asked Becky about the role leadership has played in leading a school that has demonstrated the four sustainability principles. Becky reflected that as a leader she was “the primary starting point.” Becky was the one who started the school and made sustainability a focus. She also explained that an important part of her role had been, “making sure that the staff is staying on track and just making sure they’re focusing on [sustainability] as a value.” Becky gave an example of this and explained; “We had to implement a purchasing policy because each teacher has a budget to buy stuff for their rooms and we had to make sure that they’re buying things that are more eco-friendly and not things like plastics.” Becky’s main piece of advice for leaders interested in ECEfS was:

Take things one at a time; just do parts of programs; don’t try to do everything all at once; and get others involved. Get your staff involved and find someone who wants to champion things and help you because there can’t be just one person doing it.

### **Case 3: Ana**

Ana’s school is located downtown in a large Midwestern city. When I walked to the school, from a nearby parking garage I passed several other paid parking lots, brunch restaurants, coffee shops, bars, and bodegas. As I approached the school, located in a

seven story red brick building, I noticed a large sign that stretched the entire stature of the building. The sign consisted of the school's name and their logo, which incorporated the image of a large painted Earth. Before approaching the front door to the school I passed several large windows where the school logo was again present along with signs for two certifications earned by the school, Eco-Healthy Childcare, and EDGE (Early Development of Global Education).

Upon ringing the buzzer, a young energetic woman met me at the door and enthusiastically introduced herself as Ana, the center director of the school. We walked in and I could immediately hear children from all directions, busy with their day. Ana was quick to point out recycling bins, pictures of children gardening, and posters that shared the school's accolades from Eco-healthy Childcare and EDGE (Early Development of Global Education). After a brief tour Ana went back to her office and allowed me to walk around, make observations about the space, and take photographs.

Upon starting my observations, I first noticed a poster advertising the school's enrichment programs. The enrichment programs were listed as urban gardening, music, art, book club, social give back, concerts in the park, yoga, Spanish, and field trips. I then visited four classrooms which each had ecological names, which included the Redwoods and the Bean Sprouts. Each classroom had science areas and documentation that showed the children's work with sustainability concepts. One of the displays was of several Earths painted by children, and another other was a collage of children's painted handprints under a sign that read, "With these hands we will help the Earth."

After the observations were completed, I joined Ana in her office for an in person interview. The office was filled with books and resources on topics such as child

development, sustainability, and school environments. Ana sat across from me, she was smiling and noted that she was happy to do the interview.

### **Personal connection to sustainability**

**Background with sustainability.** Ana shared that she had an undergraduate degree from Indiana University in K-12 education and a minor in health. After graduation she got an associates degree in early childhood development and then a master's degree in early childhood education from Erickson's Institute. She had worked in early childhood for eight years and had been a director for the last three.

Ana first become involved with sustainability in early childhood in 2011 when she became employed at the school where she currently works. She mentioned that before coming to her current school she worked at numerous other early childhood centers, "mostly corporate," and none of which valued sustainability. However, she also noted that since coming to her new school she has noticed "a lot of chain schools and other early childhood centers starting to adapt or show interest in sustainability initiatives."

Personally Ana has valued sustainability since college and it is something she says she has always taken seriously. She explained that she has always believed in global warming or climate change, but when she was a young adult she didn't make as sustainable choices as she does now because she was concerned with her basic needs, such as being able to pay her rent, and eating on a limited budget. Ana explained her journey with making the school more sustainable helped her learn about how to live life in a more sustainable way. Ana further explained; "I realized how easy it can be, there is a lot in a sense that really isn't that hard, it is maybe only hard for the few weeks of getting used to new habit and then you don't even realize that you do it anymore."

Ana became passionate about ECEfS after she started working at the school.

However, she disclosed,

I was connected to those principles without me realizing it, in the sense that when I came from schools I worked at I said I don't want to work at a place that treats teachers like robots, and they're moved from room to room. I don't want to work at a place that kids are looked at as money symbols with legs and are moved around from room to room.

Ana also pointed out that it was the school's values that attracted her,

It's about a value system over a profit, so their end goal isn't to make millions of dollars, it's to make a place where these kids grow up in and in turn out to be a certain kind of human.

It was this mentality that originally attracted Ana to the school. Through our conversations and other school documents I came to understand that values are important to the leaders of this school.

**Instilling a value.** When asked what sustainability means to her, Ana replied that in early childhood sustainability is “about instilling a value.” Ana explained that there is a lot she could not control because they rented their building, and the state had certain limiting requirements. However, Ana explained her hope was:

By making choices that we can control, like recycling, or using the paint we use, or the materials we choose, that these kids grow up with that value already set and that these things become a natural process for them.

Ana revealed that she did not grow up with these values and she had to relearn ways of doing things as an adult, “I’m hoping that these habits are not something to relearn, when they are 18-21 and probably live on their own.”

Ana’s school has been open since 2010 and was owned by four private owners who she said valued sustainability. The vision included a belief that children should learn:

An awareness of their responsibilities in the world that will be theirs in the not too distant future. With our environmentally oriented classroom teachings, our Urban Farm program, serving organic, locally grown food, healthy cooking classes for parents, chemical- free surroundings and ongoing recycling efforts, [we have] strived to expose both your children and you, the parents, to an environmentally friendly environment.

Additionally, the school’s goal was for all school community members to have “an exposure to a spirit of Gratefulness and Social Giveback by involving our staff, you the parents, and most importantly the children in various local and international charitable projects.”

I asked Ana what she valued most about sustainability in early childhood. She again spoke of the importance of values.

By the time they leave here and really start to put things together, or when they bring things from home and say, you know I’m giving this away, my toy because some other kid might need this. I can’t control them once they leave here at 5 years old, and I hope that if I run into them somewhere at 18 years old they are going to have the kind of value system that we instill, I’m hoping as a 25 year old

they walk behind someone and pick something off the ground, like its not a big deal to them.

**Becoming accredited.** Ana came to the school a year after they opened, four years ago, as a teacher, and was promoted to director the following year. When discussing the first years of the school and the role of sustainability principles, Ana revealed that when she started working at the school;

The school was only a year old, there were already philosophies and missions, in place, [sustainability] was something that they wanted as a key component to the school. I would say that when you are only a year old a lot of stuff is just trying to get your day to day done, and that extras are usually an afterthought. Once I became director, I found the EDGE program and we decided to get EDGE accredited, and I did that entirely, and that kind of changed our game.

Ana's school was the first early childhood center in her state to earn the EDGE accreditation. Ana confessed that some things the owners thought were sustainable in fact were not, and the EDGE program helped her get them on board with certain initiatives because they were required in order to become EDGE certified.

Ana noted that when she presented the owners with the EDGE requirements the owners "realized there is a lot more that they could do" and they made strides "to even relearn habits." Ana reiterated that during the first year, leaders were concerned with enrollment and getting the day to day operations down. Although the school was developed with sustainability in mind, and that was present through the design of the space, major certifications and projects didn't happen until the school had been in business for a few years.

When Ana was asked why she decided to pursue the EDGE certification she replied;

I was finding the challenge was trying to have my staff do these things or convincing ownership to do these things and it kind of felt like I was saying ‘I think this is a good idea’ and they were all saying ‘That’s a lot of work, for what reason?’ When you have a third party that gives you a list of things that are considered good or bad, on the teacher end it was easier to enforce stuff, because I could stay like these our the standards we have to live up to, and its not a choice. Then on the ownership end I was able to use EDGE as a marketing tool for enrollment. So the end goal was to make these things happen for a bigger purpose, but in the short term goal it was to be able to get those things to actually be done, sometimes, it just kind of like you have to have someone else say it and it seems to make a big difference.

I asked Ana how she found the EDGE accreditation and she responded that she searched on the Internet. She confessed that a lot of LEED (Leadership in Energy and Environmental Design) accreditation information was coming up but she was afraid that accreditation would be too ambitious for her and the program at that time. Ana noted, after doing an extensive search she found EDGE and was attracted to the organization because she was able to see the accreditation criteria ahead of time so she could make an informed decision.

I was able to see what would be expected of us and I thought it was an even mix of stuff that I could check off, half that we already do, and the other half were

feasible things that we could do, with the time limitations of being in a rental space and being downtown. There are a lot of limitations that I have.

I asked Ana if EDGE was an organization that was created specifically for early childhood programs. She answered, “no it is not,” and her feeling was that most of the programs that go through the certification process are private early childhood programs because there is a lot of bureaucracy in the public school structure. She explained her frustration because although, from her experience, most of the EDGE accredited schools are early childhood programs, “the criterion by no means was geared towards early childhood.” Ana thought it would be beneficial to have an accreditation that included several aspects of sustainability like EDGE that was geared specifically for early childhood. She expressed that it was difficult when she would go through the required criterion for EDGE but knew that state-licensing standards would not allow what EDGE required.

When your reading criterion and thinking well in early childhood you have to do this, I’m calling the criterion people saying, you know in early childhood we have to do this, how does that fit with the criterion and they have to think about it and get back to me. So it would be nicer if it actually was entirely based on early childhood because you know we have to maintain ratios, there is a huge care aspect of early childhood that really goes into play, and it would be easier just meeting the standards if they were geared towards the age group.

**Vision.** Ana’s vision is to expand and build a bigger early childhood center and possibly even add another location.

If I could do anything I would build a school from the ground up and get a consultant with the actual contract building of the school to have more space. I would love to be able to garden indoors, to be able to do stuff like that.

She further expounded on this idea by saying she does not want to necessarily become a chain but she would like to be able to expand to allow increased enrollment, which would result in more capitol that could be used for sustainability initiatives.

You know the \$200,000 we do for Make-A-Wish every year is fabulous, and other things we do are fabulous, but I would love to do stuff on a bigger scale, and if part of that was becoming accredited that joined us with other schools in order to be a bigger group like where schools all over the country could come together to donate huge amounts of things that would be even more fabulous.

### **Practical application**

Ana informed me that the first step was to focus on the physical space. The school was designed with sustainability in mind and the owners carefully picked out materials that would support their value of sustainability. The following information was provided about the design of the space.

We have used natural and eco-friendly materials throughout. We have used non-toxic and zero-VOC paints, and our FLOR carpet not only has recycled content, but also uses an odorless adhesive. Our tables and chairs are also certified to meet sustainability criteria. We have used natural materials such as wheat-board and cork, and materials with recycled content such as the Vetrazzo® countertop at our reception desk. We have maximized natural light and used full spectrum fluorescent lighting in our classrooms to help children learn better. We have

salvaged and reused glass panels at the classrooms, and reused elements to the extent possible. Our vision to stay true to the timber loft aesthetics not only reduce[s] our use of materials, but also [creates] a warm, spa-like atmosphere.

**Engaging others.** After the school had been opened and operations were functioning at a satisfactory level, Ana (who had recently been promoted to director) started the process of incorporating sustainability into every aspect of the school (e.g., getting the children, teachers, and families involved). Ana explained that the process of becoming EDGE certified, and the follow up requirements to remain in good standing with EDGE, helped her engage others with sustainability. Ana confided that she had to do a lot of trainings with teachers because many were new to making sustainable choices. Ana commented;

It's like you're retraining 20 years of a person's life so you know, when you get into it you can see it's more about retraining habits than it is anyone's personal opinions on it, I never felt anyone who has worked here didn't believe in what we believe in, it was always just that we had to retrain their habits.

The EDGE program provided her with trainings, which helped her get others on board, she also tried to lead by example, and found the parents of the students to be major supporters.

Honestly parents have been the biggest supporters, I was afraid that we would have a hard time doing [sustainability] and the parents help us, we can't go to the garden without parents because we need parent volunteers, and they come garden, they come bring the kids, they come water, they come harvest. With all those recyclables they collect at their house, and they can bring them, and all the stuff

that they do, all the donations that we do. That was parent money written in checks to us for social giveback, so I found the hardest people to get on board were teachers just because of retraining their habits but parents wise it's been amazing.

Ana went on to explain that the type of parents whom they attract has changed since the launch of the school five years ago. The parents they appeal to now, strongly value sustainability, and have chosen the school because of the school's values. She shared a story about parents who were architects that brought recycled materials to the school. "They bring us all of their leftover materials, so we will get huge heaps of carpet squares, or we will get huge heaps of wood, and stuff that they don't need, and they always think of us first."

The community has also taken interest in Ana's school and other businesses and companies have made donations of recycled materials to the school. She reflected on a time when a company made a donation,

There was a company filming a movie down on our street, and they saw our window about sustainability, and they walked in with all of this leftover material like take what you want, and we made robots, we made weird stuff out of it (laughter).

**Curriculum.** Ana's school described their curriculum on their website as being "based on multiple theories of child development that exemplify the emergent curriculum, anti-bias education, and natural living philosophies." Ana explained that their emergent curriculum is inspired by the Reggio Emilia approach to education. The parent handbook asserts that all of their explorations "will comprehensively include socially

conscious and eco-friendly content and will always be embedded with respect for the environment.”

I asked Ana if the EDGE program had any curriculum requirements. She explained, they had some requirements, that at first glance, seemed to be challenging with an emergent curriculum, but Ana was able to quickly overcome this challenge.

EDGE requires [us] not only to have a science and nature area, EDGE also requires every weekly lesson plan to show how they contribute to global and environmental topics. So, in the weekly lesson plan that they mail out they [the teachers] have an EDGE box that describes what they did related to EDGE. So the one struggle like with Reggio, our school is an emergent curriculum. It isn't hard-core planned in advance; it's fluid. So we kind of stopped calling them lesson plans and started calling them reflections, in order to say here's what we ended up doing this week, based off the children and then here is what happened naturally that we can relate it to the environment, and to the world. We basically want to show that things are easily connected organically. For example between going down to the park and looking at leaves to talking about trees to talking about the earth, you know it's all connected and not that hard to focus on these things.

Ana's school also incorporates Spanish, urban gardening, art, music and yoga. Ana revealed that the entire school has yoga every Friday, and that everyone seems to enjoy that activity. The school's website explains that they believe yoga is an appropriate way to help build confidence, self-regulation, and wellness. According to their website yoga classes taught at the school are often inspired by nature.

**Leadership style.** When asked about her leadership style, Ana explained that she does not have an authoritarian leadership style that is based on a hierarchy. She pointed out that the teachers have autonomy with their classrooms, how they proceed with the emergent curriculum, and sustainability with their students. Ana revealed,

I allow the teachers to be in charge of their room, so when we started I was literally like do whatever you guys want to do, do it, you just have to meet the EDGE requirements. And they all came up with their own ideas, like the one room did composting; you know we did all kinds of things.

She further explained that having the outside source, EDGE, has helped her to get the support of the teachers because it something they are all working towards, being an EDGE certified school and keeping their EDGE certification.

Ana discussed how some teachers were less confident than others with incorporating sustainability into their classrooms. She said that she always encouraged teachers to come to her if they needed help or guidance. She noted, she encouraged teachers to come into her office and “bounce off ideas” with her and other teachers. Ana explained, that process usually lead to some great ideas. Ana confessed, the teachers don’t always decide on ideas that she would normally choose but she wanted them to meet the requirements set by EDGE and to be happy with what they were doing. Ana explained,

That’s kind of how I operate, because I’m like tell me what *you* want to do and if it meets what we need to get done I’ll support you in a any way we can, whether it’s getting you time to plan or buying you new materials.

I asked Ana how she thinks the educators at her school would describe her leadership style. Ana replied to this question while laughing. She recalled that she was once many of the teachers' co-teacher before she became the director and their boss. She had an established relationship already with many of the educators. Ana explained,

Anytime I hear them talk about me, or people will tell me I'm very personable, I'm outgoing, I'm funny, I'm outspoken I'm very honest, I would say I'm less...I would say I'm more like a boss of like a tech company where I'm not very top down approach. I'm like give me all your feedback about this and then I still might have to make an executive decision that one of you might not like, but I would rather more of you to like the decision that not, so that I wouldn't call myself traditional.

While talking with Ana, I inquired if she thought *her* leadership traits were conducive to her becoming a leader of a school that demonstrated sustainability principles. Ana alluded that her leadership style lead her to be chosen for the position of director, because she was willing to hear ideas from other people and she was willing to put in the time "to make things happen." She spoke of putting in many extra hours to work on director responsibilities including sustainability initiatives and always encouraging others to come to her with ideas, even if they thought they lacked the time to do the initiative themselves.

Ana shared that she believed the perfect leader for ECEfS is one who believed in the importance of introducing sustainability in early childhood, and the importance of running a business to support sustainable development. Ana explained, "They have to want to do it. Not just for marketing reasons, like you have to want to do it because you

actually find some joy or value in it!” Ana also shared that she thought that it made sense for an early childhood directors to embrace sustainability in their schools.

Any good early childhood director would want it [sustainability principles in their program] because when you really think about it, it’s all about just how connected we are, and that every child is connected to us, whether they are our own flesh and blood or not, and who they become is connected to our future and if you care about kids, if you care about kids, you have to care about sustainability too, it’s just, it’s too connected.

**Leadership role.** Ana described her leadership role on a typical day;

Most of my job is admin related; enrollment, tuition, budgets, and handling a crisis or an emergency if a kid’s ill, handling parent volunteers, and all that stuff. I have meetings with ownership and boards and all that sort of thing, but you know I carve out, purposefully, a few breaks in between that I can go just hang out in rooms and relax, (laughter) or eat lunch with my teachers and stuff like that.

This description directly correlated with the directors’ job description laid out in the employee handbook. Ana further explained that working at her current school felt very different than the corporate atmosphere she experienced at other schools.

Ana explained, she felt like she was part of a family at her school and that even as a leader she felt very connected to the staff, families, and children. Before when Ana worked for corporate schools she said she would be walking down the hall and there might be a new employee passing her who she knew nothing about. At this school Ana

felt like she knew everyone and when she hired a new employee she already felt close to them because of the school's culture.

### **Sustainability principles**

Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. Ana described how she makes sustainability a focus at her school.

Ana explained,

Definitely on my end the physical space is important because I make all the choices on paint, on appliances, and materials. So it's completely up to me to research and make the best decisions. Curriculum-wise they do have to meet the standards, the EDGE required standards, but I rely on my teachers to make it a focus.

The following table summarizes Ana's description of how she and her school demonstrate the four sustainability principles.

Table 8

#### *Sustainability Principles and Demonstration From Case 3*

Sustainability principle	Demonstration
Respect and care for the community of life	Every room has a rule to "respect each other and be kind to each other"
	Teach lessons on being kind to plants and animals. Say things like "it hurts the plant when you tug on its leaves"
	Organically incorporate ideas into emerging projects with children
Ecological integrity	Urban farm
	Recycling and composting

	<p>Eco-friendly furniture and consideration of the environment with the design of the physical space</p> <p>Supported by requirements from Eco-Healthy childcare certification</p> <p>Organically incorporate ideas into emerging projects with children</p> <p>“Recycle about 90% of the school’s output, and [use] natural materials such as cork and wheatboard”</p>
Social and economic justice	<p>Social give back program (encourages families to raise money for causes)</p> <p>Raise money for “sister schools in Sri Lanka (to build the children a library), and Haiti (purchasing books and being involved in joint projects-see the tapestry near the kitchen!) For the Japanese children who suffered from the Pacific tsunamis, we helped replace their library (via our book fairs which parents have generously supported!). For the poor families in Africa, we have sent farm animals via Heifer International, so they could be self-sustaining going forward.”</p> <p>Scholarships for underprivileged children</p> <p>Raise money for Make a Wish (Average of \$200,000 a year)</p> <p>Organically incorporate ideas into emerging projects with children</p>
Democracy, non-violence, and peace	<p>Weekly yoga lessons to “promote self-awareness and mindfulness”</p> <p>Conversations with children about how to treat others fairly and to report behavior they find “scary.”</p> <p>Organically incorporate ideas into emerging projects with children</p>

### **Reflections and lessons learned**

**Desired resources.** Ana mentioned that one of the main things that would have helped them was a larger budget for sustainability initiatives. She alluded that at times it was challenging for her to do all of her administrative duties and head the sustainability aspects of the program. Ana explained, “To have someone that just maintains our environmental impact, our sustainability, our social giveback, and our community outreach it would be fabulous. We aren’t in the structure of being able to do that.”

Ana mentioned, as far as outside help, an organization geared towards early childhood that promoted the integration of the four sustainability principles would be helpful. She explained that it would be nice to be able to collaborate with other schools to raise money for different causes or to work together on sustainable projects. Ana also disclosed that she believes the government should get involved and make ECEfS a priority. She explained that she thinks of herself as a “future thinker” and that she believed that one day the government would provide early childhood services for all children, three and older, and that eventually sustainability will be part of that curriculum.

When asked about the role early childhood should play in sustainable development Ana replied, “I think not making it optional, I think you just have to say these are things that are important to do.” She also explained that she takes the school’s role with sustainability seriously and she wanted newly hired staff to do the same. Ana further explained,

I would say when you’re hiring teachers, make it just like a tour and say this is how we are and if they aren’t into it they won’t want to work there, and that is fine. It’s just that you don’t want to surprise them on the first day, you want to be

clear and upfront about your mission and that way you attract people who won't have such a problem with it and then again, making things come natural.

**Reflections on negative impacts.** Ana confessed that bringing sustainability principles to an early childhood school had not been without its challenges. She expressed that occasionally a teacher or parent would be very passionate about an idea but then the idea was unable to come into fruition because of licensing standards or limitations on their lease. Limitations set by the state or their landlord made some aspects of their sustainability program more difficult and frustrating.

Ana explained that her biggest obstacle with sustainability was; "Time; time, and resources to get things done." She further alluded that she had a lot of responsibilities and had to focus on the daily operations of the school plus sustainability. Ana explained that she could use help with sustainability. She confided that she often worked more hours than she was scheduled just to get everything done and that if the school could have afforded to hire someone to help with, or to lead sustainability initiatives, that would have helped her immensely. However, she explained at the time of the interview, her school did not have the financial resources to hire someone for that role. Ana further reflected on her desire for more financial resources.

The biggest thing I wish, we are not a non-profit so we don't qualify for grants, I will say I wish there was more money given more options to get money to implement sustainable stuff whether it's get a garden plot donated or a material, we would love to get 10 more plots because our kids could use getting more of that stuff, which we would love to have more access to, maybe one day."

**Reflections on benefits.** Ana explained that she felt one of the biggest benefits of having a school that focused on sustainability was that it gave teachers a greater purpose and increased their job satisfaction. Ana explained,

It's hard work, it's low pay and you don't get a lot of appreciation. Focusing on sustainability gives you something that's bigger to stay connected to, so I think there is a better feeling of just day to day, and I think that's why we have the job retention rate that we do, because early childhood has high rates [of turnover] and we have teachers who have been here for 5 years”.

As we talked, Ana continued to reflect on how her leadership style had been positively affected by her school focusing on sustainability.

Leadership in early childhood has not always been great, I have had some bad experiences and even though those experiences have been horrible, I am so glad I have had them, because they made me say like I don't ever want to do that when I am a manager. And so you need those experiences because I think that's the hardest thing when you've got ten teachers all upset about the way a parent treated them, or upset about the way this is being done, reminding them that these are minor problems, thinking about it at on a bigger scale, like if we can get through this minor issue we are having think about the much bigger stuff we can do, and I'll say part of that is giving them the freedom to do the things they want to do, like they have the social ownership.

Ana further discussed with a passionate voice that her biggest successes with ECEfS had been; “The kids and the families and the teachers having a bigger connection to the bigger issues.” Ana went on to explain that being in an early childhood program

had lasting benefits and that you might not see immediate results. Ana explained, “when you finally see it and they say something or they do something and you just kind of melt because you realize that for two years, that something you were talking about finally makes sense to them, and that’s what makes it work, but you’ve got to stick to it.”

**Advice for others.** Ana’s biggest piece of advice for leaders interested in adapting sustainability principles into their early childhood centers was, “be honest with yourself.” She explained that if a leader was in a position at a corporation or at a smaller school and their ideas were not being heard that they should seek opportunities elsewhere. “Just leave I would go somewhere where it’s valued because you are going to hit a wall, don’t exhaust yourself or think that that your values system is not shared, because there are places where it is”

### **Analysis and Synthesis of Findings**

The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. A multiple case study method was used to uncover themes about the leadership traits and leadership experiences of the three participants in this study. A qualitative multiple case study aims to find themes across cases, which allows for some generalizing beyond data from a single case (Merriam, 1988). A multiple case study cross-case analysis provides the opportunity to uncover patterns across cases (Merriam, 1988).

### **Cross-Case Analysis**

A data analysis plan developed and adapted from lead qualitative researchers was used to analysis the data for this cross-case analysis. The plan required for all cases to be analyzed individually initially. Next, the data was analyzed as a whole, to complete the cross-case analysis. This process allowed for themes to emerge across cases and patterns became evident.

Table 9

#### *Data Analysis Plan*

- 
1. Read all transcripts, notes, and artifacts from each case and record initial ideas
  2. Pick an initial case and look for substance, and meaning and write down thoughts.  
Repeat with all cases
  3. Make a list of the topics. Cluster similar topics. Put these topics into three categories: major topics, unique topics, and leftovers.
  4. Go back to the data with the list of topics. Turn topics into abbreviated codes and write the codes into the text.
  5. Turn topics into categories using descriptive words. Simplify the number of categories by grouping together topics that are related
  6. Finalize abbreviations for categories and alphabetize codes.
  7. Take the data that correlates for each code and put it in one place for analysis
  8. If necessary recode existing data
- 

*Note.* Adapted from Tesch (1990) and Roberts (2010) p. 160

### **Themes across cases**

**Physical space and nature.** Each of the three leaders lead early childhood centers in urban areas surrounded by businesses and city life. Although all of their schools were located in urban places, they all considered nature during the design and construction of the physical space. Each school had an ecological name and some aspect of nature represented in their logo design. Additionally, the materials the children used were made from wood, a natural element, and plastics were scarce at all three of the schools. The

schools were all designed with natural colors that gave each school an earthy feel. This type of design was done intentionally at all three schools. Furthermore, each school was originally designed with sustainability and nature in mind. All three leaders (as displayed in Table 10) reported using recycled materials and sustainable design for the construction of their school.

Table 10

*Physical Space Quotes.*

Case	Quotes on physical space
Case 1 (Carly)	<p>“Instill the love for nature in our children, by supporting their natural growth in a home-like, healthy and sustainable environment.”</p> <p>“Recycled materials were used in the design of this space that turned an old bar into what is now a small early childhood center.”</p>
Case 2 (Becky)	<p>“Classrooms are outfitted with light colors and cozy furnishings in eco-friendly, non-toxic finishes.”</p> <p>“We’ve done things like reusing all the doors and the trim, we repurposed it, moved it around, any materials that we could we reused and repurposed it. We also wanted to make sure all the materials we were using were super safe for the kids, like using no VOC paints. We wanted recycled materials wherever we could. Anything we could use that was recycled we did.”</p>
Case 3 (Ana)	<p>“We have used natural and eco-friendly materials throughout. We have used non-toxic and zero-VOC paints, and our FLOR carpet not only has recycled content, but also uses an odorless adhesive. Our tables and chairs are also certified to meet sustainability criteria. We have used natural materials such as wheat-board and cork, and materials with recycled content such as the Vetrazzo countertop at our reception desk. We have maximized natural light and used full spectrum fluorescent lighting in our classrooms to help children learn better. We have salvaged and reused glass panels at the classrooms, and reused elements to the extent possible. Our vision to stay true to the timber loft aesthetics not only reduce our use of materials, but also a warm, spa-like atmosphere.”</p>

## Values

**Personal values.** Each leader discussed that sustainability was a personal value that they had, which contributed to them leading a school that demonstrated sustainability principles. All three of the leaders reflected on first becoming involved with sustainability when they were in their early 20s. Carly (Case1) and Ana (Case 3) both reported being attracted to their school because of their school's values that include sustainability. Becky (Case 2), who is the owner of her school, started a school that demonstrated sustainability because she viewed sustainability as one of her "core values."

Carly and Ana both discussed how they had worked at early childhood centers that were "corporate" or "mainstream" but they did not feel like those types of centers were the right place for them because they were lacking a value system that complimented their own. Carly decided to work at her current school because it is a place she "can feel comfortable" and her current school is a place that she "can feel good about." Carly further explained, "I felt like working at a place where people were like-minded as opposed to always constantly fighting other battles in other places."

Ana when speaking on advice for early childhood leaders interested in sustainability, spoke of the importance of hiring teachers who have similar values:

I would say when you're hiring teachers make it just like a tour and say this is how we are and if they aren't into it they won't want to work there, and that is fine. It's just that you don't want to surprise them on the first day, you want to be clear and upfront about your mission and that way you attract people who won't have such a problem with it and then again, making things come natural.

Becky also described recruiting staff members who are already interested in sustainability. She further explained that by recruiting the right people she already had a staff that was engaged with sustainability.

**Instilling a value.** Each leader described encouraging the children at their school to develop values and skills that would result in them making sustainable choices now and in the future. All three leaders explained that they are educating the adults of the future and that they believe promoting sustainability in early childhood is important. Carly exclaimed; “We are raising the next generation.” Becky explained, “I think the most important thing is giving them a healthier environment and also teaching them how to treat the earth and each other...their learning that from an early age.” The vision statement at Ana’s school included a statement that children should learn “an awareness of their responsibilities in the world that will be theirs in the not too distant future.” Table 11 shows each case with quotes that correspond with *instilling a value*.

Table 11

*Instilling a Value Quotes.*

Case	Instilling a value
Case 1 (Carly)	<p>“Instill the love for nature in our children”</p> <p>“Very passionate about healthy, natural, and sustainable living and teaching those values to the next generation.”</p>
Case 2 (Becky)	<p>“We are an eco-friendly, healthy environment school, and promote a green lifestyle”</p>
Case 3 (Ana)	<p>“It’s about a value system over a profit, so their end goal isn’t to make millions of dollars it’s to make a place where these kids grow up in and in turn, turn out to be a certain kind of human.”</p> <p>“By making choices that we can control like recycling or like using the paint we use or the materials we choose that these kids grow up with that value already set and that these things become</p>

---

a natural process for them.”

“I’m hoping that these habits are not something to relearn, you know when they are 18-21 and probably live on their own.”

---

**Parent’s values.** The participants in this study all described one of the biggest benefits, of focusing on sustainability at their school, was the business it had brought from parents who also valued sustainability. “Our waiting list is huge!” Carly pointed out. Carly explained that being a center that focused on nature and sustainability helped her keep a full enrollment. Becky also spoke about parents in the neighborhood of the school valuing sustainability, and that choosing to be a school that valued sustainably was good for business. Becky explained, “Its healthier for the children, healthier for the staff, and the families appreciate it, so it’s a good selling point.” Ana explained that the parents they attract value sustainability. She also explained, “parents have been the biggest supporters.” Ana’s school relied on parents to help with gardening, bringing in recycled materials, and to make donations for their social give back program. She explained that the parents chose her school because they wanted their children to be involved with these types of programs.

### **Curriculum**

**Constructivist.** All three participants described their school as using learning models inspired by constructivist learning theory. Constructivist learning requires one to gain knowledge and meaning from experiences (The University of Sydney, 2015) or learning by doing (Jaramillo, 1996). Carly (Case 1) described her school’s philosophy as one that was inspired by Waldorf, Reggio Emilia, and Montessori philosophies. While Becky’s school (Case 2) used the Montessori philosophy, and Ana’s school (Case 3) used

an emergent curriculum inspired by the Reggio Emilia approach to education. “All three approaches view children as active authors of their own development, strongly influenced by natural, dynamic, self-righting forces within themselves, opening the way toward growth and learning” (Edwards, 2002, p. 4).

**Sustainability.** The participants in this study described using their selected learning approach or approaches as catalysts for children to construct knowledge of sustainability concepts. All three leaders shared evidence that their school focused on providing a curriculum where children learn to grow and eat organic food. Additionally, each leader promoted environmental consciousness through their curriculum. Table 12 shows each case with corresponding evidence of their curriculum.

Table 12

*Evidence of Curriculum.*

Case	Curriculum
Carly (Case 1)	<p>“The curriculum is inspired by Waldorf, Reggio Emilia, and Montessori philosophies, with an emphasis on outdoor activities, environmental awareness, sustainable gardening and explorative art activities.”</p> <p>“Teaching children the importance of healthy eating and understanding where food comes from improves their nutrition and instills better habits for life.”</p> <p>“Find a way to grow environmentally conscious children by connecting them to their natural environment through creative play and exploratory activities.”</p>
Becky (Case 2)	<p>“Focuses on the whole child in a unique blend of Montessori learning methods and creative enrichment activities.”</p> <p>“We are an eco-friendly, healthy environment school, and promote a green lifestyle”.</p> <p>“Encourage a lifelong thirst for knowledge using Montessori learning materials uniquely appropriate for each child’s stage of development.”</p>

---

“Promote an eco-friendly environment and a healthy lifestyle that builds strong children and a curiosity to explore their world”.

“Develop each child’s social and emotional capabilities so they learn to behave in caring, responsible ways, build self-esteem and enjoy interacting with others. We value diversity and uniqueness in our students and faculty, and always promote respect for each other”.

“Foster a desire to help others in the community through active involvement that teaches the joys of service. Build a circle of encouragement and support to include the child, family, faculty and neighborhood”

---

Ana (Case 3) “It is here that children learn how to engage in a healthy and responsible lifestyle through daily exposure to learning projects, natural living green alternatives, harvesting school-grown food for healthy cooking and eating, as well as by taking a socially responsible stance in their environment, both within the school as well as the community around them”.

“[Children] thrive in this playful yet educational context, growing into healthy, environmentally conscious, and independent thinkers.”

“Our curriculum is based on multiple theories of child development that exemplify the emergent curriculum, anti-bias education, and natural living philosophies. This is implemented with the help of caring, passionate, educated and highly experienced educators who facilitate natural living learning projects through diet, environment, and social responsibility”

“Emergent curriculum is inspired by the Reggio Emilia approach.”

---

### **Non-Traditional Leadership**

**Education level.** Each of the three participants had a higher educational level than what was required by their state to direct an early childhood center. Carly (Case 1) earned an Associated Degree in Early Childhood education and a credential in infant/toddler care. Additionally she was taking courses to become a Wisconsin Master

Naturalist and had over 10 years experience in the early childhood field. The minimum requirements for someone in Carly's position, in her state, is to have 80 days experience as a teacher in a license early childhood center, have a high school diploma or equivalent, and three courses in early childhood development (Wisconsin DCFS, 2015).

Becky (Case 2) also had a higher level of education than required by her state. Becky earned a Bachelor's degree and Master's degree in Computer Science. Additionally Becky earned an MBA and has taken many early education courses. She explained, "I have gone back and taken a ton of early education courses, so I don't have a degree in it but I have 20 something semester hours." Ana (Case 3) earned a Bachelor's degree in K-12 education with a minor in Health. She later went back to school and got an Associates degree in Early Childhood Development. After earning an Associates degree she decided she wanted to further her education in early childhood studies and she went back to school earning a Master's degree in Early Childhood Education. The minimum requirements for both Becky and Ana were to have 60 semester hours of college coursework with 18 of those directly related to early childhood; or two years of child development experience and 30 semester hours of college credits with 10 credits related to early childhood; or completion of a credential program approved by the state (Illinois DCFS, 2015).

**A less hierarchal approach.** The leaders in this study all described themselves as being what they viewed as atypical leaders. All three of the participants strongly emphasized that they involved others in as many decisions and processes as possible. Carly (Case 1) discussed how she liked to involve the other staff members "at every level possible." She went on to explain that she encourages open communication and an

environment where ideas were shared and decisions were made together. Carly further emphasized, she is a “team player” and she does “not work from the top down.”

Becky described herself as coach who, “lead by example.” Becky emphasized that she and her staff worked together on cumulating ideas and coming up with creative solutions to any problems they may have faced. Like Carly and Becky, Ana described her leadership style as one that was not authoritarian but one that promoted autonomy for her staff members. Ana explained she encouraged teachers to “bounce off ideas” and she was always open to supporting her teachers. Ana further alluded that the teachers at her school had a great deal of autonomy in the day- to -day operations of their classrooms. Table 13 outlined each case with corresponding evidence of each participant’s leadership style.

Table 13

*Leadership Style*

Case	Leadership style
Case 1	<p>“As an entire team we talk about the pros and cons and if that’s what we want to do, and who is going to take care of it.”</p> <p>“My staff and me, we are a team and I don’t make decisions for them, I ask them their opinions”.</p> <p>“We work very closely, which I think is very healthy and I think that that’s why this place functions so well.”</p> <p>“I’m very inclusive, again I don’t work from the top down so I try to include everyone on decisions”</p>
Case 2	<p>“With the staff meeting together a lot of time they are trying different ideas from each other and they are learning from each other.”</p> <p>“Coaching style”</p> <p>“I work with them to try and help them with certain areas, um, I don’t usually just give orders, I’m not that kind of leader”</p>

---

“Getting them more involved and not just telling them what to do and dictating it. Getting them more involved helps them own their part of it so they learn more”

---

Case 3 “I allow the teachers to be in charge of their room, so when we started I was literally like do whatever you guys want to do, do it, you just have to meet the EDGE requirements. And they all came up with their own ideas like the one room did composting, you know we did all kinds of things.”

“That’s kind of how I operate because I’m like tell me what *you* want to do and if it meets what we need to get done I’ll support you in any way we can whether it’s get you time to plan or buying you new materials”.

“I would say I’m more like a boss of like a tech company where I’m not very top down approach. I’m like give me all your feedback about this, and then I still might have to make an executive decision, that one of you might not like, but I would rather more of you to like the decision than not. So I wouldn’t call myself traditional.”

“If we can get through this minor issue we are having think about the much bigger stuff we can do, and I’ll say part of that is giving them the freedom to do the things they want to do, like they have the social ownership”

---

**Passion for sustainability.** All three leaders explained having a passion for sustainability. The three participants also felt that leaders interested in adapting sustainability should be passionate about incorporating sustainability principles. Becky (Case 2) explained that leaders interested in sustainability should have “enthusiasm for sustainability”. Ana (Case 3) exclaimed, “They have to want to do it. Not just for marketing reasons, like you have to want to do it because you actually find some joy or value in it!”. When discussing sustainability Carly (Case 1) revealed; “I think you have to have a passion for it. It’s not just a job it’s not just my position it’s actually something that I find really important so I will do my hardest, most of the time, to make sure if there is something when it comes to children or sustainability, most of the time I will make it happen. I have a very strong passion about it so I think that that’s really important. You know, I don’t do things arbitrarily I do things that are meaningful”.

**Desire for additional resources**

**Additional space.** All three participants revealed that one of their biggest desires was for more space. Becky (Case 2) explained that she would like an outdoor space for a playground.

I would love it if we had a playground that we could do more natural materials in and things like that, that is one of the things that we don't get to do, we take the kids out every day and we work with them like they collect materials and things like that so [a playground] would be nice.

Carly (Case 1) discussed how she wished they had more land to grow more food;

I would like to get permanent raised beds in the backyard to do more gardening, also there is a vacant lot on the corner there and I would like to get a little bit more land to grow more food and if it's possible I'd like to get some chickens back there, and the worm composting system, and the worms can be fed to the chickens.

Ana also revealed that if she could have done anything she would have had more space to build another center;

If I could do anything I would build a school from the ground up and get a consultant with the actual contract building of the school to have more space to be able to garden indoors, to be able to do stuff like that.

**Additional support.** All three participants expressed a desire for additional support with sustainability at their schools. The participants were asked what their biggest obstacles were in adapting sustainability principles and the all three responded that finding the financial resources to adapt sustainability principles had been a challenge.

Additionally finding materials, connecting with other “like minded” schools, and resources to help with sustainability program operations were discussed.

Carly (Case 1) discussed wanting additional financial and business resources along with a database that connected her school with other schools that focused on sustainability. Becky (Case 2) described a desire to have a resource to help her find sustainable materials and also financial resources. Ana (Case 3) also emphasized the need for financial resources as well as a desire to connect with other schools. The three participants all strongly emphasized an aspiration for additional financial resources that would help them with their desired goals and to help fund sustainability initiatives.

### **Unique themes**

There were some unique themes that were not present across all three cases. One of these was accreditation and certificates. Both Carly and Ana had gone through the process of earning accreditations and certificates from outside sources to support their sustainability efforts. Becky had not earned or applied for any certificates or accreditations, but mentioned that she was interested in applying for an accreditation.

Another unique theme was how the participants gained the support of their staff members. Both Carly and Becky explained that they hired people who already had the same values, while Ana discussed having to help others “learn new habits.” Ana credited the EDGE accreditation for helping her get others on board. A third unique theme was the leadership role of each participant. Carly had “dual roles” of both a teacher and director, Becky was the owner of her school, and Ana was the director of her school. The fourth unique theme was the importance of partnerships with other organizations. Both Carly

and Ana discussed collaborating with other organizations on sustainability efforts while Becky did not mention any partnerships.

### **Summary**

A qualitative multiple case study was used to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. A case-by-case report was first completed using a narrative style appropriate for a case-by-case report (Stake, 1995). Sections in the case-by-case report were organized by topics developed from the interview protocol (Appendix A). These topics included sustainability principles, personal connection to sustainability, the practical application of sustainability, and reflections and lessons learned from leaders who lead private early childhood centers that value sustainability. A cross-case analysis uncovered themes across cases. The major themes were: (a) physical space and nature, (b) values, (c) curriculum, (d) non-traditional leadership, and (e) desire for additional resources. Each participant expressed a desire for additional resources. A response to the participant's desire for additional resources was a proposal for a solution. This solution called for the development of a new nonprofit organization that would provide resources for leaders involved with Early Childhood Education for Sustainability (ECEfS).

## CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

**Introduction**

Sustainability is an urgent issue that has global impacts with the serious costs for children and future generations (Davis & Elliot, 2014). As a response, world wide, an increasing number early childhood programs are adapting sustainability as a core value for their programs. However, leaders are not publishing their experiences with Early Childhood Education for Sustainability (ECEfS), and literature on this topic is scarce (Davis, 2009). This study intended to pioneer American research on sustainability leadership in early childhood studies.

A qualitative multiple case study was used to answer research questions. The central research question was: how do early childhood leaders who lead centers that demonstrate sustainability principles, describe their role in implementing the following principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace? Sub research questions covered topics on leaders personal connection to sustainability, the application of sustainability, and reflections and lessons learned.

Three participants, identified by purposeful sampling, participated in this study. A case-by-case report as well as a cross-case analysis was completed. The cross-case analysis identified themes across cases, which included: (a) physical space and nature, (b) values, (c) curriculum, (d) non-traditional leadership, and (e) desire for additional resources. A summary of the findings outlined leadership traits and leadership experiences of three leaders involved with ECEfS. Based on the results of this study a

solution was developed, which included a list of recommendations for early childhood leaders interested in ECEfS.

### **Purpose Statement**

The purpose of this multiple case study was to explore leadership traits and leadership experiences of leaders from Midwest private early childhood centers that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **Aim of the Study**

The aim of this study was to describe leadership traits and leadership experiences of leaders in early childhood settings that demonstrated sustainability principles. Sustainability principles were defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **Summary of Findings**

As a response to the aim of this study, a summary of leadership traits and leadership experiences of the three participants was produced. These three leaders held leadership positions at early childhood centers that demonstrated the four sustainability principles. All three participants responded to in person interview questions (Appendix A) that were developed to uncover their leadership traits and leadership experiences. Additionally, each participant provided artifacts with supporting information.

### **Leadership traits**

**Sustainability as a personal value.** All three participants described sustainability and living a sustainable way of life as being a personal value. They all expressed happiness for their choice to work at or own a center that demonstrates sustainability principles. Additionally, all three participants described a desire to instill a value of living sustainably to the children who attend their school. Furthermore, participants described their personal values as being matched by their customers (parents of children) and that this sense of shared values resulted in attracting parents to choose the center for their children.

**Passion for sustainability.** All three participants not only described sustainability as a personal value but they also described having a passion for sustainability. Participants made clear, they do not embrace sustainability for marketing or business reasons only, but because they believe sustainability is important. This enthusiasm for sustainability is what helped drive these leaders. The participants used their passion for sustainability as a motivator to make things happen.

**Non-traditional leaders.** All participants had earned higher levels of education than required by their state for their positions. Additionally, they all described themselves as being non-traditional, non-hierarchical leaders. Each participant stressed the importance of involving her staff in as many decisions as possible. They also described giving their staff members a great deal of autonomy and promoting a collaborative work environment. Each participant explained that they encouraged their staff members to share ideas and make decisions when possible.

### **Leadership experiences**

**Physical space and nature.** Although each early childhood center was located in an urban setting, leaders used inspiration and thought about the natural world during the design of the space. All three participants described focusing on the physical space and design of their schools as a starting point for adopting sustainability principles. They all described using recycled material in the design of the space. Additionally, each participant's school was named an ecologically inspired name and the indoor décor mimicked the natural world with soft earth tones.

**Curriculum.** Participants described their early childhood center as using a constructivist inspired learning model. Curricula or learning models used by participants included Montessori, Waldorf, and the Reggio Emilia approach to education. Each participant also described using their curriculum to help children construct knowledge of sustainability concepts. Additionally, each center's curriculum included gardening, and sustainability concepts such as instilling a love for nature, environmental consciousness, a green lifestyle, and a healthy lifestyle.

**Desire for additional resources.** A common theme across studies was that the leaders all had a strong desire for additional resources. They expressed that they wished for more space to expand their sustainability efforts. Additionally, all participants expressed a need for additional support. They made clear that their biggest challenge with sustainability efforts had been financing, and they strongly desired a grant program or other funding sources. Participants also expressed the need for help finding sustainable

materials, and a desire to connect with other schools whose leaders also value sustainability.

### **Implications for Practice/Recommended Solution**

As a response to participants' desire for additional resources, experienced leaders involved with Early Childhood Education for Sustainability (ECEfS) could start a non-profit organization that provides recourses for leaders involved with ECEfS. This organization could provide a set of recommendations for leaders, provide grant opportunities, provide contact information for the purchasing of sustainable materials, provide networking opportunities for ECEfS leaders, and provide a forum for leaders to share their experiences with sustainability at their schools. This may start as its own entity but could evolve as part of an organization that acts as an accrediting agency for early childhood schools demonstrating the four sustainably principles: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

### **List of Recommendations**

As a response to study outcomes of this qualitative multiple case study, a list of recommendations was made for early childhood leaders interested in ECEfS. These recommendations have been developed based on the literature review and qualitative data collected from this multiple case study. Following are recommendations for ECEfS leaders:

- Focus on the physical space as a starting point
- Involve others when possible/use an non-hierarchal approach to leadership
- Inform potential new hires of your values and goals

- Seek certifications/accreditations
- Make sustainability a business advantage/use to attract families
- Form partnerships with outside organizations
- Share experiences with others and if possible publish experiences
- Choose a transformational education model
- Make small changes over time
- Learn change theory

### **Change Theory**

Organizations who have not previously demonstrated the four sustainability principles could benefit from aspects of change theory to help during the implementation process of sustainability initiatives. Leaders will need to have a clear vision (Kotter, 2007). By creating a vision and a plan of action employees will know what the goals are and what they are working towards. Part of this vision could be to implement a series of first order changes that together, over time, will result in a second order change. A first order change is a change that occurs within a system or a part of the system is changed but the essence of the system remains the same (Ben-Eli, 2009). A second order change is a fundamental organizational change where the essence of the organization is changed (Ben-Eli, 2009). In addition to having a clear vision and implementing first order changes, leaders could benefit from involving others at every level possible (Burke, 2011). Involving others in change initiatives helps diminish the likelihood of resistance (Burke, 2011).

### Support for the Solution from Data Collected

The participants, from this qualitative multiple case study, all revealed the need for additional resources to help with sustainability goals at their schools. All three of the leaders studied strongly emphasized the need for financial help with sustainability initiatives. Participants in this study expressed the desire to receive financial help through grant funding sources, which to their knowledge were unavailable or limited for early childhood centers that operated as for-profits. Additionally, participants expressed a desire for a “database” (Case 1), a desire for a resource “that joined us with other schools in order to be a bigger group” (Case 3), and to help “finding materials” (Case 2). Furthermore, Ana (Case 3) desired an accrediting agency that supported the four sustainability principles and was geared specifically towards early childhood education. Table 14 shows each case with supporting quotes that show the need for an organization that provides recourses for leaders interested in and involved with ECEfS.

Table 14

#### *Support Desired by Each Case.*

Case	Support desired
Case 1 (Carly)	<p>“I think it would be great to have an organization that helped with grants.”</p> <p>“We could use financial [help] even just advice on business in general how to run our budget our food budget isn’t very big so we cant get healthy meats so figuring a way how to make that work, an all inclusive resource.”</p> <p>“It would be nice to have a data base... we have a huge waiting list so I’d like to be able to refer to people other schools that are like minded because we have a huge waiting list”</p>
Case 2 (Becky)	<p>“I think some of the challenges early in have been finding materials and equipment and things that fit, that you know safer you know there is so much plastic out there and so many of the you know even the furniture sometimes the finishes aren’t all that great so sometimes that</p>

---

kind of thing can be a challenge to find the right stuff and still meet DCFS and other requirements. One of the big ones we do not use bleach here so finding a more acceptable bleach alternative was always a challenge.”

“It would be nice if there was like a grant program or something that would help you buy more equipment or buy changes to your building that would be useful especially for a lot of other programs if they are retrofitting something”

“I would say cost is probably part of it [the challenges] but then also just finding things you know even organic food you cant get everything in organic sometimes.”

---

Case 3 (Ana)

“The biggest thing I wish, we are not a non-profit so we don’t qualify for grants I will say I wish there was more money given more options to get money to implement sustainable stuff whether its get a garden plot donated or a material, we would love to get 10 more plots because our kids could do more of that stuff, maybe one day.”

“ I wish for time, time, and resources to get things done”

“I didn’t have time already free to do that [EDGE certification] I had to just add it on to my already day to day duties so same with like all the more things we could do like getting LEAD certified or me Googling even more things I could probably find a million things we could, do every day its just that if there was a budget for someone to have that as their job, to have someone that just maintains are environmental impact, our sustainability, our social giveback, and our community outreach it would be fabulous. We aren’t in the structure of being able to do that”

“You know the \$200,000 we do for Make-A-Wish every year is fabulous and other things we do are fabulous but I would love to do stuff on a bigger scale and if part of that was becoming accredited that joined us with other schools in order to be a bigger group like where schools all over the country could come together to donate huge amounts of things that would be even more fabulous.”

“When your reading criterion and thinking well in early childhood you have to do this, I’m calling the criterion people saying, you know in early childhood we have to do this, how does that fit with the criterion and they have to think about it and get back to me. So it would be nicer if it actually was entirely based on early childhood because you know we have to maintain ratios, there is a huge care aspect of early childhood that really goes into play um and it would be easier just meeting the standards if they were geared towards the age group”.

---

### **Existing Support Structure and Resources**

Because this is a proposal for the development of a new nonprofit organization, an existing support structure does not exist. However, there are a growing number of early childhood leaders interested in and adapting sustainability principles at their schools. Research suggest; “The growing trend towards adopting ‘green principles’ in child care services is part of a broader sustainability movement, which seeks to meet the needs of the present generation without compromising the ability of future generations to meet their own needs” (Mckay, 2009). This growing number of leaders involved with Early Childhood Education for Sustainability (ECEfS) is adding to a potential pool of leaders who could become involved with, support, and bring resources to an organization whose aim will be to provide resources to leaders interested in adapting the four sustainability principles. The sustainability principles are defined as: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace.

Early Childhood, environmental, and government organizations could be used as resources for a nonprofit organization supporting ECEfS leaders. Additionally, The National Council of Nonprofits is an existing resource that could be used during the conception and through the entirety of this non-profit. Also, organizations that support sustainability education in K-12 schools could be potential resources. Some of these organizations include: The Cloud Institute for Sustainability Education, The Sustainable Schools Project, and The US Partnership for Education for Sustainable Development.

**Potential Barriers and Obstacles to Proposed Solution**

Starting a new organization will take a significant amount of time, commitment, and resources. However, this study reveals the need for an organization that provides resources to ECEfS leaders. Developing this organization could give current leaders the opportunity to have a large impact on the early childhood education system and the sustainability movement. Some potential barriers leaders might face will be time management, finding funding sources, and the initial recruitment of members. Additionally, during implementation leaders will have to develop an easily navigated website for which to share the organization's information. Finding the right technology support could be an obstacle during both the formation and throughout the life of the organization.

**Financial/Budget Issues Related to Proposed Solution**

Forming a nonprofit organization will take financing; an initial plan and budget should be formed. Each state has a filing fee for filing the 'Articles of Incorporation', in Illinois this filing fee is 50 dollars (White, 2015). Additionally leaders of the organization will want to file for IRS tax exemption. While the founders of the organization can do filing the Articles of Incorporation and the IRS Tax exemption themselves, they may want to contact an attorney to assure all forms are filed correctly. Nonprofit organizations get their funding from a multitude of sources, including but not limited to: fees for goods and or services, individual donations and major gifts, corporate contributions, foundation grants, interest from investments, government grants, loans, and membership dues and fees (GrantSpace, 2015). All possible funding sources should be considered to develop a funding strategy.

**Legal Issues Related to Proposed Solution**

Policies will need to be established for the operations of an organization that provides resources for ECEfS leaders. Leaders will need to follow laws for nonprofit organizations on the state and national level. Part of the state requirements for filing a non-profit, in Illinois, is forming by-laws. Leaders will be responsible for forming by-laws, which they will follow for the day-to-day and overall operations of the organization. Additionally, leaders could use information and research about the importance of ECEfS to advocate for new licensing laws in each state that allow alternatives to toxic cleaning materials.

**Implications for Future Research**

The role of leadership in relation to ECEfS has been researched in very few studies. While this study is a starting point for uncovering leadership traits and leadership experiences of sustainability leaders who lead early childhood centers; researchers could expand on the findings of this study by broadening the sample. Researchers could focus on studying leaders from faith-based and public early childhood centers, which were not represented in this study. Additionally, a study about what American educators value about sustainability could add to this understudied field of research.

This multiple case study was not longitudinal, but a multiple case study that encompassed several years could provide a deeper level of insight into the leaders' journey with sustainability principles at their early childhood center. Early Childhood Education for Sustainability (ECEfS) is a phenomenon that is under-researched and research is needed, particularly from American authors. Research could include: teacher's perceptions of sustainability leaders, long-term learning outcomes of children attending

sustainable schools, the environmental impact of schools who adapt sustainability initiatives, the impact of outside partnerships on sustainability initiatives, sustainability as a business model for early childhood centers, parents perceptions of sustainability curricula, and the perceptions of government officials on ECEfS. Additionally, because sustainability leadership is a growing phenomenon across disciplines, studies could be used to uncover the leadership traits and leadership experiences of sustainability leaders from a variety of fields including but not limited to business, the nonprofit sector, and higher education.

### **Summary of the Study/Conclusion**

There has been a call for leadership studies by lead researchers in ECEfS (Davis, 2014). Sustainability is an important issue to introduce in the first part of life (Siraj-Blatchford, 2009), and with an escalating awareness of sustainability issues, an increasing amount of early childhood centers are adapting sustainability principles in their schools. However, leaders are not recording and publishing their experiences, so those interested in adapting sustainability concepts into their early childhood centers are left with a lack of research (Davis, 2009).

This dissertation was a qualitative multiple case study exploring leadership traits and leadership experiences of leaders that demonstrated sustainability principles in early childhood settings. Purposeful sampling was used to collect data from early childhood leaders that demonstrated all four sustainability principles. Sustainability principles, defined by The Earth Charter International include: (a) respect and care for the community of life, (b) ecological integrity, (c) social and economic justice, and (d) democracy, non-violence, and peace. Participants were invited to participate based on a

screening of published materials (school websites) that provided evidence that each early childhood center demonstrated sustainability principles.

A case-by-case report included sustainability principles, personal connection to sustainability, the practical application of sustainability, and reflections and lessons learned from leaders who lead private early childhood centers that valued sustainability. A cross-case analysis uncovered themes across cases. The major themes were: (a) physical space and nature, (b) values, (c) curriculum, (d) non-traditional leadership, and (e) desire for additional resources. Each participant expressed a desire for additional resources. A response to the participants' desire for additional resources was a proposal for a solution. This solution called for the development of a new nonprofit organization that would provide resources for leaders involved with ECEfS. Support for the solution from data collected, existing support structure and resources, potential barriers and obstacles, financial issues, legal issues, and change theory were all discussed in relation to the proposed solution. Additionally, a list of recommendations was provided. These included: focus on the physical space as a starting point; involve others when possible; use a non-hierarchical approach to leadership; inform potential new hires of your values and goals; seek certifications/accreditations; make sustainability a business advantage/use to attract families; form partnerships; share experiences with others and if possible publish experiences; choose a transformational education model; make small changes over time; and learn change theory. Because this is a new topic of study, there are several recommendations for future research. Some of these include: teacher's perceptions of sustainability leaders, long term outcomes of children attending sustainable schools, the environmental impact of schools who adapt sustainability initiatives, the impact of

outside partnerships on sustainability initiatives, sustainability as a business model for early childhood centers, parents perceptions of sustainability curricula, and the perceptions of government officials on Early Childhood Education for Sustainability (ECEfS). Further research is also needed on sustainability leadership in business, nonprofit, and higher education sectors.

## References

- Bates, S., & Tregenza, N. (2006). Education for sustainability in the early years: A case study from Hallett Cove preschool. *Australian Sustainable School Initiative South Australia*. Retrieved from <http://www.decd.sa.gov.au/efs/files/pages/HallettCovePreschoolCaseSt.pdf>.
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13(4), 544-559. Retrieved from <http://www.nova.edu/ssss/QR/QR13-4/baxter.pdf>
- Ben-Eli, M. (2009). Sustainability: The Five Core Principles—A New Framework. *Buckminster Fuller Institute*. Retrieved from [http://www.sustainabilitylabs.org/files/Sustainability%20%20The%20Five%20Core%20Principles\\_0.pdf](http://www.sustainabilitylabs.org/files/Sustainability%20%20The%20Five%20Core%20Principles_0.pdf)
- Burton, I. (1987). Report on reports: Our common future: The World Commission on environment and development. *Environment: Science and Policy for Sustainable Development*, 29(5), 25-29.
- Copple, C., & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: National Association for the Education of Young Children.
- Center for Disease Control and Prevention (CDC) (2008). *Guideline for Disinfection and Sterilization in Healthcare Facilities, Iodophors*. Retrieved from [http://www.cdc.gov/hicpac/Disinfection\\_Sterilization/8\\_0Iodophors.html](http://www.cdc.gov/hicpac/Disinfection_Sterilization/8_0Iodophors.html)
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approach* (4th ed.). Thousand Oaks, CA: SAGE Publications, Inc.

- D'Amato, A., Henderson, S., & Florence, S. (2009). *Corporate social responsibility and sustainable business*. Greensboro, NC: Center for Creative Leadership.
- Daries, J., Engdahl, I., Otieno, L., Pramling-Samuelson, I., Siraj-Blatchford, J., & Vallabh, P. (2009). Early childhood education for sustainability: Recommendations for development. *International Journal of Early Childhood*, 41(2), 113-117.
- Davis, J. (2008). What might education for sustainability look like in early childhood? A case for participatory, whole-of-settings approaches. In I. P. Samuelsson & Y. Kaga, (Eds.), *The contribution of early childhood education to a sustainable society* (pp. 18-25). Paris, France: UNESCO.
- Davis, J. M. (2009) Revealing the research 'hole' of early childhood education for sustainability : a preliminary survey of the literature. *Environmental Education Research*, 15(2), pp. 227-241.
- Davis, J. (2014). Examining early childhood education through the lens of education for sustainability. In J. Davis & S. Elliot (Eds.), *Research in early childhood education for sustainability: International perspectives and provocations* (pp. 21-37). London: Routledge
- Davis, J., & Elliott, S. (2014). An orientation to early childhood education for sustainability and research—framing the text. In J. Davis & S. Elliot (Eds.), *Research in early childhood education for sustainability: International perspectives and provocations* (pp. 1-17). London: Routledge.
- Davis, J. M. and Gibson, M. L. (2006) Embracing complexity: Creating cultural change through education for sustainability. *International Journal of Knowledge, Culture*

*and Change Management, 6(2), 93-102.*

- Didonet, V. (2008) Early childhood education for a sustainable society. In Samuelsson, I. P., & Kaga Y., (Eds.) *The contribution of early childhood education to a sustainable society* (pp. 25-30). Paris, France: UNESCO.
- Duhn, I. (2012). Making 'place' for ecological sustainability in early childhood education. *Environmental Education Research, 18(1), 19-29.*
- Edwards, C. P. (2002). Three approaches from Europe: Waldorf, Montessori, and Reggio Emilia. *Early Childhood Research & Practice, 4(1), 1-24*
- Elliott, S. (2010). Essential, Not Optional: Education for Sustainability in Early Childhood Centres. *Exchange: The Early Childhood Leaders' Magazine Since 1978, 192, 34-37.*
- Environmental Protection Agency (EPA). (2016). *Climate Change*. Retrieved From the Environmental Protection Agency website: <http://www.epa.gov/climatechange>.
- Ferdig, M A. (2009). *Sustainability leadership relational model and practices*. Sustainability Leadership Institute. Retrieved from [http://www.sustainabilityleadershipinstitute.org/downloads/SLI\\_model\\_download.pdf](http://www.sustainabilityleadershipinstitute.org/downloads/SLI_model_download.pdf)
- GrantSpace (2015). *Knowledge base*. Retrieved from <http://grantspace.org/tools/knowledge-base/Funding-Resources/General/How-are-nonprofits-funded>
- Hägglund, S., & Johansson, E. M. (2014). Belonging, value conflicts and children's rights in learning for sustainability in early childhood. In J. Davis & S. Elliot (Eds.), *Research in early childhood education for sustainability: International*

- perspectives and provocations* (pp. 38-42). London: Routledge
- Hanson, D., & Middleton, S. (2000). The challenges of eco-leadership. *Greener Management International*, 2000(29), 95-110.
- Helm, J. H., & Katz, L. G. (2010). *Young investigators: The project approach in the early years*. New York, NY: Teachers College Press.
- Hughes, P., & Hosfeld, K. (2005) The leadership of sustainability. *The Center for Ethical Leadership*. Seattle, WA. Retrieved from [http://www.ethicalleadership.org/uploads/2/6/2/6/26265761/sustainability\\_report.pdf](http://www.ethicalleadership.org/uploads/2/6/2/6/26265761/sustainability_report.pdf)
- Illinois DCFS (2015). *Chapter III: Department of children and family services. Subchapter requirements for licensure part 407 for childcare centers*. Retrieved from <http://www.ilga.gov/commission/jcar/admincode/089/08900407sections.html>
- Jaramillo, J. A. (1996). Vygotsky's sociocultural theory and contributions to the development of constructivist curricula. *Education*, 117(1), 133.
- Koralek, D. (2005). Introduction, YC Young Children. *National Association for the Education of Young Children*, 60(1), 10-11.
- Kotter, J. P., (2007). Leading change why transformation efforts fail. *Harvard Business Review*. 85 (1) Retrieved from: <http://hbr.org/2007/01/leadingchange-why-transformation-efforts-fail/>
- Marton, F., & Booth, S. (1997). *Learning and awareness*. Mahwah, NJ: Lawrence Erlbaum.
- Merriam, S. B. (1988). *Case study research in education: A qualitative approach*. San Francisco, CA: Jossey-Bass.

- Maxwell, J. A. (2005). *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: Sage.
- McKay, G. (2009). Going 'green' in childcare services in *Putting Children First*, the magazine of the National Childcare Accreditation Council (NCAC) Issue 29, 12-15.
- Mac Naughton, G., & Williams, G. (2008). *Teaching young children: Choices in theory and practice*. New York, NY: McGraw-Hill Education.
- Norddahl, K. (2008). What might early childhood education for sustainability look like. In I. P. Samuelsson & Y. Kaga, (Eds.), *The contribution of early childhood education to a sustainable society* (pp. 73-77). Paris, France: UNESCO.
- Roberts, C. M. (2010). *The dissertation journey: A practical and comprehensive guide to planning, writing, and defending your dissertation*. Thousand Oaks, CA: Corwin Press.
- Rogers, K. S. (2011). Leading sustainability. *Advances in Global Leadership*, 6(1), 137-153.
- Samuelsson, I. P., & Kaga, Y. (Eds.). (2008). *The contribution of early childhood education to a sustainable society*. Paris, France: UNESCO.
- Salonen, A. O., & Tast, S. (2013). Finnish early childhood educators and sustainable development. *Journal of Sustainable Development*, 6(2), 70.
- Siraj-Blatchford, J. (2009). Editorial: Education for sustainable development in early childhood. *International Journal of Early Childhood*, 41(2), 9-22.
- Stake, R. (1995). *The art of case research*. Newbury Park, CA: Sage Publications.

- Stuhmcke, S. M. (2012). *Children as change agents for sustainability: An action research case study in a kindergarten*. (Unpublished doctoral dissertation) Queensland University of Technology, Brisbane Australia.
- Talan, T. N., Bloom, P. J., & Kelton, R. E. (2014). Building the leadership capacity of early childhood directors: An evaluation of a leadership development model. *Early Childhood Research & Practice, 16*, 1-2.
- Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. New York, NY: Falmer.
- The Earth Charter Initiative (2016). *The Earth Charter*. Retrieved from <http://www.earthcharterinaction.org/>.
- University of Sydney (2016). *Constructivism*. Retrieved from: [http://sydney.edu.au/education\\_social\\_work/learning\\_teaching/ict/theory/constructivism.shtml](http://sydney.edu.au/education_social_work/learning_teaching/ict/theory/constructivism.shtml).
- Waldman, D. A., Ramirez, G. G., House, R. J., & Puranam, P. (2001). Does leadership matter? CEO leadership attributes and profitability under conditions of perceived environmental uncertainty. *Academy of Management Journal, 44*(1), 134-143.
- Wisconsin DCFS (2015). *Wisconsin child care licensing rules and manuals*. Retrieved from <http://dcf.wisconsin.gov/childcare/licensed/rules.htm>
- White, J. (2015). *A guide for organizing not-for-profit organizations*. Retrieved from [https://www.cyberdriveillinois.com/publications/pdf\\_publications/c165.pdf](https://www.cyberdriveillinois.com/publications/pdf_publications/c165.pdf)

*Appendix A*Data Collection Tools  
Interview Protocol

Interview Protocol:

Time of Interview:

Date:

Place:

Interviewer:

Interviewee:

Position of Interviewee:

The purpose of this multiple case study will be to explore leadership traits and experiences of leaders from Chicago private early childhood centers that demonstrate sustainability principles. At this stage in the research sustainability principles will be defined as: (1) respect and care for the community of life, (2) ecological integrity, (3) social and economic justice, and (4) democracy, non-violence, and peace.

Thank you for agreeing to be interviewed for this research project. I want to remind you that your comments will remain confidential and anonymous. At this time I ask that you please sign the consent form. You can take a break or ask questions at any time. Do you have any questions before we begin?

Questions:

Personal Connection

1. What is your educational background? Your professional background?
2. What does sustainability mean to you?
3. What made you decide to bring sustainability to your school?
4. What were your questions and goals when you began?
5. What is your vision in regards to sustainability at your school?
6. What do you value most about sustainability in early childhood?
7. When did you first become involved with sustainability in early childhood? Why?

Practical Application

8. Where did you start? What did you do first?
9. How did you engage others? Do you have professional development on sustainability for your staff?

10. What kind of leadership style have you used to incorporate sustainability into your school? Was that different than how you lead before?
11. In regards to your vision, how far along are you? What have you done? What is left to do?
12. What outside help have you used? (books, training, networks, professional organizations)
13. How would the educators at your school describe you as a leader?
14. How have your leadership traits contributed to you leading a school that values sustainability?
15. Describe your idea of the perfect leader for early childhood education for sustainability. What traits would they have? How would they lead?
16. Describe a typical day at your school for you, your staff, and the children.
17. Describe how your school makes sustainability a focus (curriculum, physical space etc.) ?
18. How do you involve children with sustainability at your school?
- Sustainability principles
19. The Earth Charter identifies four sustainability principles; (1) respect and care for the community of life, (2) ecological integrity, (3) social and economic justice, and (4) democracy, non-violence, and peace. Describe your role, if applicable, in implementing these principles at your school?
- (a) Respect and care for the community of life?
  - (b) Ecological integrity?
  - (c) Social and economic justice?
  - (d) Democracy, non-violence, and peace?
- Looking back/ lessons learned
20. What would have made the process easier for you? (role models, books, training, networks)
21. If you could use any kind of outside help what would it be? What has been the barrier in getting this type of help?
22. What is the role of leadership in implementing sustainability in your school? In the early childhood field?

23. What has been your biggest influence as an early childhood leader for sustainability?

24. What have been the benefits of bringing sustainability to your school? Negative impacts?

25. What is your biggest obstacle in regards to sustainability at your school?

26. Describe your journey with sustainability in an early childhood setting. What have been your biggest obstacles/successes.

27. What are the most important pieces of advice that you would give an early childhood leader interested in adapting a sustainability focus in their school?

28. If there is something more you'd like to add about your leadership role with sustainability that I have not asked please describe that for me.

Additional questions for depth and breadth to the above questions:

Would you expound on that?

Tell me more.

How would you describe that in a different way?

I would like to hear more about that.

Would you clarify that for me?

Take me through your thought processes during that time.

Partially adapted from Hughes & Hosfeld (2005)

*Appendix B*

Site name:

Time of Observation:

Date:

Observation	Location in school	Principles (circle all applicable)	Leader's Role
		(1) respect and care for the community of life (2) ecological integrity (3) social and economic justice (4) democracy, non-violence, and peace	
		(1) respect and care for the community of life (2) ecological integrity (3) social and economic justice (4) democracy, non-violence, and peace	
		(1) respect and care for the community of life (2) ecological integrity (3) social and economic justice (4) democracy, non-violence, and peace	
		(1) respect and care for the community of life (2) ecological integrity (3) social and economic justice (4) democracy, non-violence, and peace	

*Appendix C***Bill of Rights for Research Participants**

**As a participant in a research study, you have the right:**

- 1. To have enough time to decide whether or not to be in the research study, and to make that decision without any pressure from the people who are conducting the research.**
- 2. To refuse to be in the study at all, or to stop participating at any time after you begin the study.**
- 3. To be told what the study is trying to find out, what will happen to you, and what you will be asked to do if you are in the study.**
- 4. To be told about the reasonably foreseeable risks of being in the study.**
- 5. To be told about the possible benefits of being in the study.**
- 6. To be told whether there are any costs associated with being in the study and whether you will be compensated for participating in the study.**
- 7. To be told who will have access to information collected about you and how your confidentiality will be protected.**
- 8. To be told whom to contact with questions about the research, about research-related injury, and about your rights as a research subject.**
- 9. If the study involves treatment or therapy:**
  - a. To be told about the other non-research treatment choices you have.**
  - b. To be told where treatment is available should you have a research-related injury, and who will pay for research-related treatment.**