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First-Time Participant Experiences of Socioecological Learning Opportunities in an Environmental Education Program for Adults

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Walden University
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Abstract

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by

Kevin Caleb Jenson

MEd, Colorado State University, 2016

BA, Cedarville University, 2012

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Many environmental education programs struggle to influence participants toward behavior that benefits nature and society because their presentation of information is isolated from the social and ecological context where it must be applied. Empirical studies have suggested a link between long-term behavior change and integrated socioecological experiences that influence a person's sense of identity in connection with nature and society, but few studies have described what socioecological learning opportunities might look like. The purpose of this qualitative basic design study was to explore how first-time adult participants described their experiences of integrated socioecological learning opportunities in a short-term, immersive, community-based, environmental education program. The research design was informed by a conceptual framework that included Lave and Wenger's situated learning theory and Kyburz-Graber's socioecological approach to environmental education. Transcripts of six semistructured, 90-minute interviews were analyzed with open coding, which led to four emergent themes: (a) the role of the program, (b) culture—tone of community, (c) community of practice, and (d) self/identity. Overall, the results suggest that the program provided newcomers with access to an integrated socioecological space where they could participate in the culture and practices of a community in ways that informed their sense of identity in connection with nature and society. This study contributes to positive social change by providing researchers and practitioners with greater understanding of socioecological learning opportunities as an approach to environmental education that invites participants to embody a more sustainable way of life.

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Dedication

To those brave souls who dare to dream and build a better world.

Acknowledgments

Dr. Cheryl Keen—I cannot imagine a dissertation chair more patient and equipped to guide my journey into the field of higher education research. Your commitment to my success supported me every step of the way! Thank you for taking over as my chair and investing so much attention to our discussions about research, writing, grammar, and higher education. Your insights on balancing my creativity with the requirements of academia demonstrated a value for the person without devaluing the academic process. I hope to carry at least some of this legacy forward in my future work with student researchers.

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

At the turn of the century, Crutzen and Stoermer (2000) introduced the term *Anthropocene* to begin framing discussions of the current era of ecological history in which human activities play a predominant role in shaping the global environment (Decuypere et al., 2019; Stratford, 2019). As human influence on the environment has grown, the critical role of environmental education has also grown (Affifi et al., 2017; Besley & Peters, 2020; Humphreys & Blenkinsop, 2018; Wolff et al., 2020), but educational processes have been slow to shift in response (Ceder, 2019; Germein & Vaishnava, 2019). Educators with a traditional approach to teaching have struggled to respond to calls by international education programs like International Baccalaureate (Roberts, 2015) and governing bodies like the United Nations (UNESCO, 2017) for a 21st-century education that responds to Anthropocene issues affecting the quality of human and nonhuman life on earth.

The predominant approach to environmental education has been one of adding information to existing programs, whose decontextualized design (Affifi et al., 2017; Marin & Bang, 2018) may undermine students' chances of developing a sense of connectedness to nature and a need for a sustainable way of life (Germein & Vaishnava, 2019; Humphreys & Blenkinsop, 2018). Existing research has suggested that an alternative approach to environmental education may look like a constructivist, experiential, and participatory learning context (Karpudewan & Mohd Ali Khan, 2017; Mintz & Tal, 2018), which addresses both the ecological and social (Monroe et al., 2019) aspects of the students' situatedness in a complex ecosystem of life (Affifi et al., 2017;

Goralnik & Nelson, 2017; Humphreys & Blenkinsop, 2018; Marin & Bang, 2018; Stratford, 2019). However, integrated socioecological approaches to environmental education are rare (Monroe et al., 2019), and little is understood about what they might look like (Ardoin et al., 2020).

One of the few examples of an integrated socioecological approach comes from Germein and Vaishnava (2019), who reported on the social implications of such a learning opportunity for alumni from a socioecological learning community in India. Students in their research reported that participation in the community led to confidence, self-efficacy, and a sense of identity in relation to both nature and society. Learning took place in a "socio-material" space (Germein & Vaishnava, 2019, p. 254) where a variety of activities, work, play, socialization, and study were all intertwined and seemed to continue as alumni became independent and integrated members of their local communities. Their findings align with Humphreys and Blenkinsop's (2017) review of the literature, which linked knowing nature with knowing oneself and suggested this outcome has potential for healing the relationship with oneself, society, and nature.

The need for this integrated socioecological approach to environmental education is imminent from both an ecocentric and anthropocentric perspective. Researchers like Besley and Peters (2020) have warned of the collapse of biodiversity and fragile ecosystems from a way of life (Affifi et al., 2017) that is inherently damaging to nature. They also recognized human issues of food security, which, like issues of habitability (see Laird, 2017), have disproportionately affected marginalized communities (Affifi et al., 2017). Environmental education may be a way of addressing these related social and

ecological challenges (Jorgenson et al., 2019; Stratford, 2019), but there are few empirical studies that describe integrated socioecological learning opportunities.

This chapter will include a brief look at the background of environmental education in the Anthropocene, followed by the research problem statement, the purpose of the study, research question, conceptual framework, nature of the study, definitions, assumptions, scope, and limitations.

Background

The information-based approach to learning and instruction employed by many environmental educational models perpetuates a philosophical dualism, which fails to recognize the interconnected web of human and nonhuman life (Affifi et al., 2017; Germein & Vaishnava, 2019). The abstraction of environmental education from a social and ecological context creates an othering condition (Clover, 2015) that does not recognize the inherent value of nature (Stratford, 2019), only its function as a part of human activity (Humphreys & Blenkinsop, 2017). For this reason, exposure to nature or to information about nature does not necessarily lead to a way of life that benefits nature (Haukeland & Sidsel, 2020).

Environmental education differentiates itself from other disciplines that seek to understand nature for its own sake by emphasizing behavior change on the part of the student (Bowers & Creamer, 2021). However, most research on environmental education program outcomes has focused on measuring changes in student knowledge—even though some of the research of the early 2000s had begun to shift in emphasis from a change in knowledge to change in behavior (Stern et al., 2014). Furthermore, it is not

clear that information is a primary driver of behavior change in an environmental education context (Knapp et al., 2020). For this reason, researchers have called for more studies of innovative approaches to environmental education (Rousell & Cutter-Mackenzie-Knowles, 2020).

Recent literature on the philosophy of education and environment suggests that a socioecological approach may address the challenge of philosophical dualism by restoring rather than perpetuating problematic perceptions of the human relationship to the nonhuman entities that co-inhabit the natural world (Affifi et al., 2017; Humphreys & Blenkinsop, 2017; Stratford, 2019). Using the framework of the Anthropocene, researchers have called for an approach to environmental education that enables students to form healthy relationships with society and with nature (Besley & Peters, 2020; Germein & Vaishnava, 2019; Jickling et al., 2018; Laird, 2017). Environmental education in the Anthropocene must focus on the knowledge and the skills required to relate to both human society and the ecosystem it occupies in connection with nonhuman life (Wolff et al., 2020).

Although there is substantial literature to define both the social and the ecological aspects of environmental education, few studies address them both together as part of the approach or outcome of learning and instruction. This is a valuable a perspective for future research (Ardoin et al., 2020), which is needed to understand the experiences of students and teachers in real-life learning situations because these are "fundamentally different" from learning in classrooms (Kyburz-Graber, 2013, p. 383). Future research is also needed to consider the institutional mechanisms that influence the learning process

(Smith et al., 2020). Understanding how students experience the mechanisms that provide socioecological learning opportunities may offer significant insight into a field where very few programs incorporate both a social and scientific approach (Monroe et al., 2019).

Problem Statement

The research problem is that little is known about integrated socioecological learning opportunities as an approach to environmental education that teachers and program designers could use to prepare students to address the 21st century social and ecological challenges they face. Environmental education can help students form an emotional connection to nature (Lin & Li, 2018), care for nature (Goralnik & Nelson, 2017), or even learn from nature (Marin & Bang, 2018), but these kinds of outcomes depend on the learning context (Jackson & Pang, 2017; Jorgenson et al., 2019). Early environmental education programs reflected the assumption that better information would lead to better behavior toward the environment (Rickinson, 2001), and a majority of programs maintain this focus (Grilli & Curtis, 2021; Stern et al., 2014). However, the correlation between information and behavior has been challenged by empirical literature (Dijkstra & Goedhart, 2012; Gould et al., 2019), resulting in a call for more studies of innovative approaches to environmental education (Ličen et al., 2017; Rousell & Cutter-Mackenzie-Knowles, 2020).

There are few empirical studies that describe the student experience of socioecological learning opportunities. Though some have recognized social and ecological implications of environmental education (e.g., Borg et al., 2014; Clark et al.,

2020; Ličen et al., 2017), I found little research (see Ardoin et al., 2020) that described an integrated socioecological approach to environmental education. However, the few studies that highlight an integration of social and ecological learning opportunities suggest that these can play a role in forming an environmental identity or shaping how individuals see themselves in terms of their relationship with the ecosystem they share with human and nonhuman life (Gray & Colucci-Gray, 2019; Williams & Chawla, 2016).

Environmental identity has been found to be a strong predictor of pro-environmental behavior (Knapp et al., 2020; Simms, 2020), which suggests that learning opportunities with the potential to inform a person's sense of environmental identity could be an effective way of reaching the goal of environmental education: a change in behavior that benefits both nature and humanity (Clark et al., 2020). Simms's (2020) review of the literature related to environmental identity showed that social and ecological theories have been the primary influences on how environmental identity is understood. The intersection of social and ecological aspects of environmental identity suggests that socioecological learning opportunities, which recognize the interconnection of human relationships with both natural and social systems (Affifi et al., 2017; Kyburz-Graber, 2013), may be an important approach to consider for environmental education.

<center>**Purpose**</center>

The purpose of this qualitative, basic design study was to explore how first-time adult participants described their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program in the United States. The value of the integrated socioecological approach taken by AxSol (a

pseudonym) was unclear because few empirical studies had described or evaluated

programs that offered socioecological learning opportunities. The few studies of

integrated social and ecological learning opportunities were conducted with programs

that focused on children or a formal learning context (e.g., Germein & Vaishnava, 2019;

Kyburz-Graber et al., 2006; Williams & Chawla, 2016). Following a basic design for

qualitative research, I collected data through interviews with former participants in the

program about their experiences. Using the framework of situated learning (Donaldson et

al., 2020; Lave & Wenger, 1991), I explored how adult participants from the 2019

program described their experiences through the lens of legitimate peripheral

participation in a community of practice (Wenger et al., 2002) gathered around a

sustainable way of life. The intent of the study was to understand the perceptions of adult

participants who took part in a learning experience that followed an integrated

socioecological approach to environmental education. The phenomenon of interest was

socioecological learning opportunities as an innovative approach to environmental

education.

Research Question

The research question addressed by this study was as follows: How do first-time

adult participants describe their experiences of socioecological learning opportunities in a

short-term, immersive, community-based, environmental education program?

Conceptual Framework

The conceptual framework for this study included two parts. The first part was the

theory of situated learning theory, developed by Lave and Wenger (1991) and adapted to

geoscience education by Donaldson et al. (2020). The second part of the conceptual

framework was a model of environmental education that used a socioecological approach

synthesized by Kyburz-Graber (2013). In the following two sections, I outline the

primary theoretical propositions of the conceptual framework and show how these

theories informed the design of this study. More details can be found in Chapter 2.

Situated Learning Theory

The first part of the conceptual framework for this study was situated learning

theory. Lave and Wenger (1991) developed the theory of situated learning around

legitimate peripheral participation, which frames education in terms of deepening one's

membership in a community of practice through participation in authentic contexts.

Donaldson et al. (2020) applied the work of Lave and Wenger to geoscience education

research. They synthesized three core elements of legitimate peripheral participation:

community of practice, authentic context, and embodiment/identity development. Lave

and Wenger defined community of practice as "a set of relations among persons, activity,

and world, over time and in relation with other tangential and overlapping communities

of practice" (p. 98). Communities of practice contribute to authentic contexts in which

individuals find opportunities for legitimate peripheral participation. The term

embodiment, not expressly developed by Lave and Wenger, was synthesized from their

work by Donaldson et al., who defined it as performance in one's field, self-efficacy, and

recognition by others as members of the community of practice. Both sets of researchers

referenced and built on social learning theory (see Bandura, 1977) and the construct of

the zone of proximal development (see Vygotsky, 1980). I used situated learning theory

to inform the literature search process, the design of the interview questions, and the expected data analysis process.

Socioecological Approach

The second part of the conceptual framework for this study came from research by Kyburz-Graber (2013, 2019) and Kyburz-Graber et al. (1997, 2006), which led to a socioecological model of environmental education. Environmental education with a socioecological approach can serve as a bridge between individual experiences and global-scale problems by creating space for localized and divergent understandings and approaches to evolutionary ways of being in relationship with nature and society (Kyburz-Graber, 2019). Kyburz-Graber (2013) described the instructional approach as constructivist, reflective, critical, and participatory. For purposes of this study, Kyburz-Graber's model of the socioecological approach helped to validate the integration of social and ecological dimensions of environmental education. However, I was not certain that it could fully account for the informal community-based learning context of AxSol since it was developed in a more formal setting, which is why situated learning theory was also used.

<div align="center">

Nature of the Study

</div>

This study employed a basic qualitative design to explore how first-time adult participants described their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program. The phenomenon explored in this study was socioecological learning opportunities as an approach to environmental education that integrates both social and ecological

dimensions of learning. A basic qualitative research design can provide rich, thick, descriptive data to synthesize a shared understanding of the phenomenon (Patton, 2015).

I conducted six semistructured, 90-minute interviews with adult students who participated in the 2019 program as a means of gaining insights into their experiences (see Rubin & Rubin, 2012). Interviews can give insight into the subjective perceptions of individuals concerning their experiences, which is a useful way of understanding a social phenomenon like education (Seidman, 2006). Interviews can also provide a benefit to the students as they invite further reflection on the experience (Patton, 2015). Individual study participants were presumed to be experts in their experiences. Their expertise, combined with a narrow scope and a homogenous, purposefully selected sample (Guest et al., 2006), made it reasonable to expect data saturation (Mason, 2010) within eight to 12 interviews. Data analysis followed general qualitative methods of coding (Saldaña, 2016) to identify themes that represented the phenomenon of socioecological learning opportunities in the words of the students (Seidman, 2006). To maintain confidentiality, the identity of the program has been masked and it is referred to in this document as AxSol.

Definitions

For the sake of clarity, definitions specific to this study have been provided for several key terms.

Environmental education: In this study, environmental education has been broadly defined (see Bowers & Creamer, 2021) as learning opportunities designed to inspire a change in behavior that benefits nature and humanity (Clark et al., 2020). It

encompasses related fields like education for sustainability, sustainable development,

conservation education, climate change education, and environmental adult education.

Socioecological: An approach to environmental education that integrates both

social and ecological dimensions of learning (Ardoin et al., 2020; Simms, 2020; Williams

& Chawla, 2016).

Learning opportunities: Experiences of learning that may include direct

instruction, active participation, presence in a local context, peer discussion, and so forth,

even if there is no formal curriculum. Lave and Wenger (1991) noted that learning

opportunities may be distinct from opportunities in which instruction is provided.

Legitimate peripheral participation: Lave and Wenger (1991) used this phrase to

describe the process by which individuals engage with the activities of a community of

practice in ways that are accessible to their skill level and sanctioned by the community.

Donaldson et al. (2020) identified legitimate peripheral participation as the core of

situated learning theory and suggested that it included three primary components:

community of practice, authentic context, and embodiment/identity.

Authentic context: As described by Lave and Wenger (1991), authentic context is

the space provided by a community of practice for legitimate peripheral participation. In

this study, the authentic context included three primary factors identified in the empirical

literature: immersion in nature, learning in community, and holistic practice.

Environmental identity: Environmental identity is how individuals see themselves

in terms of their relationship with nature (Clayton, 2003). In a situated learning context,

this may look like an embodiment of the behaviors and values of a community of practice

(Donaldson et al., 2020) that sees itself as an integrated part of the natural ecosystem (Haukeland & Sidsel, 2020). It may also include social elements (Williams & Chawla, 2016).

Assumptions

The design of the study was based on the following assumptions:

- The program offered by AxSol in 2019 represented the phenomenon of socioecological learning opportunities.

- Participants were willing and able to share accurate reflections of their experiences.

- Participant experiences were representative of the phenomenon of study, which enabled understanding the phenomenon through interviews about their experiences (Seidman, 2006).

- Participants were experts on their experiences of the phenomenon, which informed the forecast of the sample size needed for data saturation (see Guest et al., 2006).

Scope and Delimitations

Because of sampling limitations, the scope of this study was narrowed to exploring first-time participant descriptions of their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program in the United States. The program itself was not the phenomenon of study but rather the socioecological learning opportunities students may have identified embedded within it (Wenger, 1998). Although the learning experience of AxSol was

open to participants of all ages, separate tracks were available for children and teenagers,

which focused the design of the socioecological learning opportunities on adult learners.

For this reason, I chose to limit the interviews to the adult student population.

While developing the conceptual framework for this study, I explored several

theories or constructs of education and found two that aligned closely with this study but

would have changed its focus. The first was the social-ecological model of human

development (Bronfenbrenner, 1979), which highlights relational and contextual factors

that influence the learning experience. Although these factors played a role in the student

experience, I chose to use the socioecological approach outlined by Kyburz-Graber

(2013), which was designed for an environmental education context and framed the

ecological context explicitly with reference to nature. The second potential construct I did

not use to frame this study was experiential learning (Kolb, 1984). Although the

overarching trajectory of the AxSol program was experiential, students had the

opportunity to learn particular social and ecological skills with a number of instructors

who used different forms of teaching that may or may not be experiential. I chose to use

situated learning theory (Donaldson et al., 2020; Lave & Wenger, 1991) for this study

because it allowed me to more freely examine the contextual factors that students might

perceive as influencing their experience.

Limitations

The primary limitation of this study was the singular instance of a program

offering socioecological learning opportunities. There is a chance that the student

experiences at AxSol during the summer of 2019 do not reflect the socioecological

intention of the program or that the program studied was not broadly representative of the innovative phenomenon of socioecological learning opportunities. This limitation also affected the dependability and transferability of this study because previous iterations of the AxSol program (and other environmental education programs) may represent different limiting features that informed how they offered socioecological learning opportunities. A related methodological limitation of this qualitative study was a dependency on the students' memories of their experience to represent the aspects of the context that supported their learning experience. Initial designs for data collection presumed what would have been a more recent summer 2020 program, but this was canceled because of the Covid-19 pandemic. This means that memories evoked during the interviews were nearly 2 years old and reflected a program that was offering socioecological learning opportunities for the first time.

Another limitation of the study design came from the data collection process. Interviewing is not limited to the words spoken by the study participants (Rubin & Rubin, 2005). My preference as a researcher was to conduct interviews in person in order to more easily observe body language and build rapport with the interview partner (see Rubin & Rubin, 2005). Personal presence is also more aligned with the tradition of intimate social connection represented by this program. However, social distancing protocols to limit the spread of the Covid-19 virus demanded that I use technology like video conferencing or phone calls to conduct the interviews. Since many of the potential participants for this study came from rural areas without strong internet connections,

there was a good chance I would be limited to collecting only voice data from individuals who may not be entirely comfortable using that medium of communication.

The potential for researcher bias in this study came from two primary sources. First, I had my own experience of learning with AxSol, which is how I became familiar with its unique approach. I also carry an innate bias toward innovation as being an improvement when it may sometimes be more of a barrier to learning. Second, I had positive rapport within the community of practice and wanted to support it with my research. However, this desire may have worked in favor of overcoming my bias as I recognized the value of insights I could bring as a researcher by accurately representing participant perspectives. Another method of overcoming the limitations of bias involved the use of a journal to record my evolving thoughts (Ortlipp, 2008). This journal was maintained separately from the coding journal and occasionally reviewed with my committee for evidence of bias in reporting.

The limitation of transfer was particularly relevant to this study, which synthesized a diversity of environmental education traditions in an effort to focus on common learning challenges. Broadly speaking, the goal of environmental education is behavior change (Clark et al., 2020), but the findings of this study will transfer most easily to those few contexts (Grilli & Curtis, 2021) that focus on broad-based, long-term change in behavior. This study also has a limited ability to inform the design of formal learning contexts that do not have access to an outdoor setting.

Significance

The significance of this study is that it may provide much-needed insights into socioecological learning opportunities as an alternative approach to environmental education. Exploring the student experiences of environmental education in the short-term, immersive, community-based context of AxSol could provide increased understanding of existing literature, which suggests the effectiveness of a socioecological approach without empirical examples of what it might look like (Mintz & Tal, 2018; Monroe et al., 2019). The analysis of student perceptions may provide insights into how the social and ecological components of environmental education contribute to the student learning experience. Specifically, it may help to identify what factors of a learning context students perceived as playing a significant role in their learning process. Results from this study may also provide insight into whether socioecological approaches to environmental education warrant further investigation as alternatives to existing pedagogical methods as a way of enabling students to practice a more sustainable way of life.

Long-lasting impact has appeared to emerge from innovation that flowed through local and informal networks, which were sometimes supported by more formal structures (Kezar, 2014). This study carries the potential for positive social change by providing researchers, program designers, and teachers with a deeper understanding of the process of innovative learning opportunities in an environmental education context. Rich descriptions of socioecological learning opportunities can provide a foundation for future research on the features and effectiveness of this approach to environmental education.

Future program organizers may apply the unique learning context explored by this study to refine and improve the effectiveness of related educational offerings. The practical insights of this study can provide educators with additional tools and perspectives to overcome pedagogical limitations that undermine traditional environmental education efforts. Ultimately, though, a deeper understanding of innovative approaches to environmental education may improve the chances that students of all ages will be effectively equipped to navigate the complex socioecological challenges of life in the 21st century.

Summary

In this chapter, environmental education was positioned as the answer to global challenges driving the need for environmental education (UNESCO, 2017), which threaten not only the biodiversity of the planet but also the survival of the human species (Besley & Peters, 2020). In spite of consistent calls for innovation within the field of environmental education (Ličen et al., 2017; Rousell & Cutter-Mackenzie-Knowles, 2020), the predominant approach remains one of information transfer (Grilli & Curtis, 2021). The information-transfer approach has not demonstrated its effectiveness in changing behavior (Gould et al., 2019; Knapp et al., 2020) because it reflects a broader decontextualized learning experience that promotes a separation between humans and nature (Affifi et al., 2017). Environmental researchers have used the Anthropocene to highlight this challenge and called for an approach to environmental education that is both social and ecological (Laird, 2017; Stratford, 2019). Although both of these aspects of learning have been developed by the literature on environmental education (e.g., Borg

et al., 2014; Clark et al., 2020; Ličen et al., 2017), they have seldom been combined in an integrated approach to learning and instruction.

The purpose of this study was to explore how students described their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program. A conceptual framework that included situated learning theory and the socioecological approach helped to structure a qualitative study of the phenomenon of socioecological learning opportunities. A qualitative research design using interviews was chosen to explore participant perspectives of this experience and included several inherent assumptions that have been outlined. Definitions of key terms were provided, followed by an explanation of the scope and delimitations of the study. The limitations of the study were defined along with its potential significance to contribute to social change in research and practice.

In Chapter 2, I will provide an overview of empirical research related to socioecological learning opportunities as an alternative approach to environmental education. I will also describe the literature search strategy and more details on the theories that informed the conceptual framework guiding the design of this study.

Chapter 2: Literature Review

Little is known about integrated socioecological learning opportunities as an approach to environmental education that teachers and program designers could use to prepare students to address the 21st century social and ecological challenges they face. Environmental education can help students form an emotional connection to nature (Lin & Li, 2018), care for nature (Goralnik & Nelson, 2017), or even learn from nature (Marin & Bang, 2018), but these kinds of outcomes depend on the learning context (Jackson & Pang, 2017; Jorgenson et al., 2019). Early environmental education programs reflected the assumption that better information would lead to better behavior toward the environment (Rickinson, 2001). Though most programs maintain this focus (Grilli & Curtis, 2021; Stern et al., 2014), the correlation between knowledge and behavior has been challenged by empirical literature (Dijkstra & Goedhart, 2012; Gould et al., 2019), resulting in a call for more studies of innovative approaches to environmental education (Ličen et al., 2017; Rousell & Cutter-Mackenzie-Knowles, 2020). AxSol (a pseudonym) is an environmental education program with an approach to environmental education that combines a social and ecological focus. However, the value of their approach was unclear because few empirical studies have described programs that offer socioecological learning opportunities. The purpose of this qualitative, basic design study was to explore how first-time adult participants described their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program.

Empirical studies have recognized social and ecological implications of environmental education (e.g., Borg et al., 2014; Clark et al., 2020; Ličen et al., 2017), but few have described an integrated socioecological approach to environmental education. Nevertheless, research suggests that socioecological learning opportunities may be a critical link in forming an environmental identity or shaping how one sees themselves in terms of their relationship with the ecosystem they share with human and non-human life (Gray & Colucci-Gray, 2019; Williams & Chawla, 2016). Environmental identity has been found to be a strong predictor of pro-environmental behavior (Knapp et al., 2020; Simms, 2020), which suggests that learning opportunities with the potential to inform an individual's sense of environmental identity can lead to a change in behavior that benefits both nature and humanity (Clark et al., 2020). Simms's (2020) review of the literature related to environmental identity showed that social and ecological theories have been the primary influences of how environmental identity is understood in an environmental education context. The intersection of social and ecological aspects of environmental identity suggests that socioecological learning opportunities, which recognize the interconnection of human relationships with both natural and social systems (Affifi et al., 2017; Kyburz-Graber, 2013), may be an important approach to consider for instruction related to environmental education.

This chapter opens with a review of the literature search strategy, followed by the development of a conceptual framework in two parts. The first part is based on Lave and Wenger's (1991) theory of situated learning theory as elaborated for geoscience education by Donaldson et al. (2020) to emphasize community of practice, authentic

context, and embodiment/identity development as core elements of legitimate peripheral participation. The second part of the conceptual framework is a model of a socioecological approach to environmental education, described by Kyburz-Graber (2013) as constructive, reflective, critical, and participatory. The subsequent review of empirical literature related to key concepts situates this study within the ongoing discourse around environmental education, environmental adult education, and related fields like education for sustainability, sustainable development, and conservation education. In this study I recognize the ability of these related fields to inform and benefit from the practices of environmental education (see Bowers & Creamer, 2021).

In the first part of the literature review, I present the goal and purposes of environmental education with a closer examination of the relationship between environmental identity and pro-environmental behavior. Environmental identity is defined using social and ecological dimensions. In the second part, I outline a socioecological approach to environmental education by examining literature related to three elements related to an authentic context: immersion in nature, learning in community, and holistic practice. In the third part of this literature review I explore the balance of learning and instruction as shared by bridging organizations and self-efficacy. I close the chapter with a summary of key factors and a proposal of how this study addresses a gap in the literature.

Literature Search Strategy

I began the literature search by looking for empirical research related to programs like AxSol. I had not yet identified the socioecological construct to help me understand

what made AxSol distinct, so I looked for obvious similarities like short-term, immersive, or community-based learning that was situated in nature. After determining that empirical studies had not examined AxSol or its partner programs, I broadened the search by looking for literature related to any programs addressing the same range of social and ecological topics. I found several studies that had been published on the topics of survival skills, crafting, ancestral skills, outdoor education, bushcrafting, and experiential environmental education. Some of these included a focus on the social or ecological component of learning and have been described in the relevant sections of the literature review. However, apart from a few studies conducted with children or formal programs (e.g., Germein & Vaishnava, 2019; Kyburz-Graber et al., 2006; Williams & Chawla, 2016), I could not find any empirical literature that addressed the phenomenon of integrated socioecological learning opportunities. AxSol provided a unique context in which to explore this innovative phenomenon as its 3-day summer program in 2019 offered socioecological learning opportunities in a short-term, immersive, community-based, environmental education program for learners of all ages.

I used the following keywords and subject search terms to locate empirical literature in multiple databases provided by Walden University: *social ecological* or *socioecological* or *socio-ecological* combined with *knowledge* or *learning* or *education.* Databases included Education Source, Academic Search Complete, Sage, Business Source Complete, ERIC, GreenFILE, Public Administration Abstracts, Research Starters-Education, SocINDEX with full text, Teacher Reference Center, Regional Business News, and Hospitality and Tourism Complete. To expand on limited results, I also used

synonyms and subject terms that appeared in the initial search. These included *place-based, immersive, participatory, transformative,* and *community* combined with *environmental education, education for sustainability,* and *sustainable development*. I also used direct journal searches, citation chaining, and reference searches throughout the databases and Google Scholar to expand my exposure to relevant search terms and unexpected research factors.

After identifying situated learning theory as the conceptual framework for this study, I conducted a cross-section search for *environmental education* or *sustainable development* combined with *situated learning* or *peripheral participation*. A multi-database search in Academic Search Complete, Education Source, ERIC, GreenFILE, and Research Starters–Education returned only 29 results since 2015. However, a search for aspects of situated learning, including *community of practice*, *identity/embodiment*, and *authentic context,* revealed several studies where authors had used situated learning theory (sometimes using all three of its elements; see Donaldson et al., 2020) to study environmental education while only referring to one of the elements in the study's title, framework, or database keywords.

Two influential themes emerged in the search process related to innovative approaches to environmental education. The goal of behavior change emerged from an instructional focus on knowledge, skills, and attitudes as the purpose of environmental education. Environmental identity then appeared in recent literature as an important construct influencing behavior. This connected with Lave and Wenger's (1991) theory of

situated learning and suggested that socioecological learning opportunities might be described as an authentic context rather than a formalized curriculum.

Conceptual Framework

This study was based on a conceptual framework comprised of two parts. The first part was situated learning theory, developed by Lave and Wenger (1991) and applied to geoscience education by Donaldson et al. (2020). This theory was used to frame the research design, search strategy, and data analysis process. The second part of the framework was the socioecological approach, a model synthesized by Kyburz-Graber (2013), which suggested elements that may appear in the process of analyzing the learning context.

Situated Learning Theory

The first part of the conceptual framework for this study was the theory of situated learning, which was proposed by Lave and Wenger (1991) to explore the relationship between learning and its social context. They explained the learning process as the development of a relationship between the learner, the community of practice, and the skill or practices of that community. In their seminal publication, the authors stressed legitimate peripheral participation as the process through which individuals might gradually become full participants in a community of practice.

Lave and Wenger (1991) did not position situated learning as a method of instruction but as a broader framework to understand how the various elements of an authentic context created opportunities for legitimate peripheral participation. They recognized an inherent curriculum within every community of practice but distinguished

between a teaching curriculum (designed around what the teachers know) and a learning curriculum, which provides "situated opportunities" (p. 97) for students to develop their own practice. In other words, they identified the role of a teacher as extending beyond instructional discourse to involve the creation of authentic learning contexts where learners can find legitimacy, guidance, and access to the resources and relationships necessary for participation in the community of practice (Lave & Wenger, 1991). In this respect, Lave and Wenger claimed that the primary question of situated learning theory is one of access to learning opportunities.

Legitimate Peripheral Participation

According to Lave and Wenger (1991), for learning to occur, individuals must have access to participate in a community of practice in a way that is both legitimate and peripheral. Legitimacy can be a challenge for individuals when the community tries to exclude new members, forcing the learner to acquire their own access to the resources and relationships they need. Peripherality, as demonstrated by Lave and Wenger's analysis of apprenticeship among midwives, suggests that the learner gradually receives exposure to an increasing number of tasks. For this reason, the trajectory of learning typically begins at the end of a process and proceeded toward the beginning of that process, helping learners contextualize each individual activity as part of a complex whole. However, Lave and Wenger also found that an obstruction to learning occurred in an environment where economic considerations relegated new members of the community to the performance of the same simple rote tasks that conferred legitimacy without opportunity for advancement through the development of additional peripheral

skills. Their example of butchers' apprentices showed how the isolating layout of the learning/workspace and the misdirection of formal training combined to limit newcomers to legitimate peripheral participation in only a few parts of the complex process.

Donaldson et al. (2020) synthesized Lave and Wenger's (1991) work on legitimate peripheral participation in the context of geoscience education. Through a systematic review of the literature on situated learning in geoscience education, Donaldson et al. developed a framework for future research that expanded on the three elements of legitimate peripheral participation. They identified three primary areas for research analysis using situated learning theory: community of practice, authentic context, and embodiment/identity.

Community of Practice. The most widely applied element of legitimate peripheral participation is that of community of practice. Lave and Wenger (1991) defined community of practice as "a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice" (p. 98). An example they provided includes a tailor (the sponsor), the tailor's apprentice (the learner), and the art of tailoring (the practice). A community is often defined by its tools or its "technologies of practice" as these become a gateway through which new members connect with history and culture by learning how others have used these tools before them (Pike, 2018). Donaldson et al. (2020) identified social interaction, peer collaboration, and mentorship as the three unique parts of the community of practice in geoscience. These seem to be the tools individuals use to navigate the learning curriculum and through which the community of practice reproduces its traditions—even

if that curriculum is not explicitly defined. With time, communities of practice evolve to reflect the perspectives of new members and the demands of new contexts. A tension thus arises between the continuity and modification of traditions (Lave & Wenger, 1991), which makes lifelong learning essential to continued participation or identification with that community.

Authentic Context. Authentic contexts emerge from communities of practice, providing opportunities for legitimate peripheral participation. As an example, Lave and Wenger (1991) described the 12-step recovery program used by Alcoholics Anonymous designed to give newcomers access to participation in the primary activity of storytelling. They observed that newcomers to the community of practice did not receive correction, only support for the contribution they made to the community by sharing their personal story, even if they did so in a way that did not align with established traditions. Over time, Lave and Wenger noted, stories told by new participants began to match those told by the more established members. But they warned that this natural human process of learning through imitation could be impeded when expectations for participation become too invisible, specialized, or mechanized.

In contrast with Lave and Wenger's (1991) focus on real-world apprentice-style learning, Donaldson et al. (2020) studied formal undergraduate learning communities. Both groups of researchers, though, maintained that access to an authentic context involved not only permission to passively observe but also the invitation to actively participate. Donaldson et al. showed that researchers in geoscience had explored authentic contexts in both place-based and virtual settings. Because their research was

limited to higher education, Donaldson et al. sought to reconcile the theoretical classroom discourse with the actual community of practice. They suggested that situated learning provides a way for these two to reunite as interactions and discussions within an authentic context gradually evolve through the use of shared language in a particular social context.

Embodiment/Identity. The third construct of legitimate peripheral participation, as synthesized by Donaldson et al. (2020), is embodiment or identity development, which can include performance in one's field, self-efficacy, and recognition. This emphasis on identity formation aligns with the desire expressed by Lave and Wenger (1991) to shift the learning conversation away from a focus on cognitive processes and onto the process by which an individual acquires the ability to move toward full participation in a community of practice through taking on its identity and embodying its practices and traditions. According to Lave and Wenger, the progression of participation proceeds from simple to complex tasks and from peripheral to integrated identity. They warned, however, against making identity formation into a measurable outcome because such a commoditization of learning could create an artificial exchange in which demonstrations of knowing become more valuable than knowing itself—especially when these demonstrations become disconnected from a strong cultural heritage. They described learning as an evolving form of membership in a community of practice where, with time, both the person and the community are changed.

Application of Situated Learning Theory to Research

Situated learning theory has seldom been used in its complete form in geoscience research (Donaldson et al., 2020), though several environmental education researchers

have made use of one or more of its elements. For example, Pedersen (2017) used communities of practice to understand professional development in the context of higher education for sustainability. Ličen et al. (2017) and Ulbrich and Pahl-Wostl (2019) also used communities of practice to understand an environmental education context, but they included additional elements of situated learning theory like legitimate peripheral participation and identity development. The best example I found of situated learning theory applied to environmental education research was a case study by Marin and Bang (2018), which was designed to understand the ways in which immersion in nature, learning in community, and holistic practice come together in an authentic learning context.

Situated learning theory was a benefit to this study because of how it fit with socio-constructivist approaches to learning, how it framed learning outcomes, and how it emphasized social dynamics. Lave and Wenger (1991) positioned situated learning theory as a wholistic, socio-constructivist process, which aligns with Kyburz-Graber's (2013) outline of the socioecological approach to environmental education. Using Lave and Wenger's theory allowed me to account for individual variations of experience within a shared social context by framing the learning outcome in terms of participation rather than demonstration. Additionally, the emphasis of situated learning on wholistic and social education processes was useful in identifying critical structures that contributed to social change by connecting the individual more closely with the community (Kyburz-Graber et al., 1997; Ulbrich & Pahl-Wostl, 2019). In their application of situated learning theory to geoscience education, Donaldson et al. (2020)

divided the phenomenon of legitimate peripheral participation into three core components (community of practice, authentic context, and identity/embodiment), which I used to guide the design of this study, the development of interview questions, and the data analysis process.

Socioecological Approach

The second part of the conceptual framework was the socioecological approach to environmental education. In the literature I reviewed, I found many references to the significance of both social and ecological aspects of environmental education, but Kyburz-Graber et al. (1997) were the only ones to synthesize these aspects into an integrated socioecological approach to environmental education. Their model was first developed in pilot projects supporting interdisciplinary instruction on environmental education (Kyburz-Graber et al., 1997). The pilot projects were followed by case studies (Kyburz-Graber et al., 2006) in which the researchers used participatory methods to provide environmental education coaching to five pre-academic high schools at the Swiss Federal Institute of Technology. The case studies showed how the socioecological approach could be implemented in a collaborative school setting and highlighted the diverse values interdisciplinary faculty brought to the instructional design model for environmental education. Each classroom implementation of the socioecological approach was different, but a common theme emerged: in addition to a critical discussion of complex and controversial real-world issues involving the teachers and the students, the socioecological approach invited a reflection on the causes of these issues. The

socioecological approach to environmental education was summarized by Kyburz-Graber (2013) with an emphasis on four dimensions of learning:

- *constructive*: learners and researchers construct and reconstruct knowledge on the basis of their own inquiries and case studies, and adopt environmental problems as socially constructed

- *reflective*: learners and researchers approach learning processes as reflection on ways of knowing and mediating knowledge

- *critical*: learners and researchers approach phenomenon and notions of environmental problems in critical and relational dimensions, including questioning historical and future perspectives

- *participatory*: learners, teachers, and researchers cooperatively interact while being aware of different interests and needs (p. 24).

The socioecological approach, as outlined by Kyburz-Graber (2013), provided a connection between established pedagogical approaches and the unique emphasis of situated learning theory on the contextual factors that influence the student experience. Although it was developed in a formal classroom context, the model was significant for this study because it represented an intentional effort to combine social and ecological dimensions of environmental education into a single integrated experience.

Literature Review Related to Key Concepts

In this section, I review empirical literature related to key concepts that have informed the understanding of socioecological learning opportunities as an approach to environmental education. The purpose and strategies of environmental education have

been defined for this study by the findings of Clark et al. (2020), who conducted a Delphi study with 39 collaborators from the North American Association of Environmental Education. They reached the following consensus statement:

> Environmental education works to move people to action for the tangible benefit of the environment and humanity. To realize these benefits, people must connect experientially with the environment, learn needed skills, and understand the complicated social and cultural connections between humanity and the natural environment (p. 396).

The goal or outcome of environmental education, as identified in this statement by Clark et al. seems to be one of action or behavior that benefits human and non-human life. In other words, the goal of environmental education can be described in terms of behavior that has social and ecological aspects. The process of reaching this goal involves a learning experience, described in the second sentence, which includes connection with nature, the cultivation of skills, and the development of a complex understanding of how human society influences the environment.

In the following review of the empirical literature, I analyze research on both the social and ecological dimensions of environmental education programs that have attempted to reach the goal of behavior change. This review includes three sections. The first section includes a review of the literature suggesting a link between pro-environmental behavior and one's sense of identity in terms of their relationship with nature and society. The next section includes an outline of elements of an authentic socioecological learning context that may contribute to the development of a

socioecological identity: immersion in nature, learning in community, and holistic

practice. The final section includes an exploration of the balance of learning and

instruction shared by bridging organizations and the self-efficacy of individual learners.

Environmental Identity and Behavior Change

This first section of the literature review includes three parts which are focused on

literature related to environmental identity and behavior change. This first part includes

research on the goal of environmental education as change in behavior, which can be

informed by one's sense of identity in connection with nature and humanity. It also

includes a description of research on two program that demonstrated an emphasis on

social and ecological dimensions of environmental education. The second part of this

section includes a focus on the social dimension of environmental identity: how a person

sees themselves in relationship with other humans (e.g., Nielsen & Ma, 2018) – because,

in the context of the Anthropocene, this has a significant impact on the environment

(Wolff et al., 2020). The third part of this section includes a focus on the ecological

dimension of environmental identity: how a person sees themselves in relationship with

nature (e.g., Haukeland & Sidsel, 2020).

The Goal of Environmental Education

Environmentalism is not just a way of acting, thinking, or feeling, but a holistic

way of life and being (Mische, 1992). The goal of environmental education is one of

supporting individuals in developing a sustainable way of life or way of being in the

world (Clark et al., 2020; Grilli & Curtis, 2021; Jickling et al., 2018). Research has

suggested that action emerges from one's sense of self (Holland, 2003 as cited in

Williams & Chawla, 2016; Whitmarsh & O'Neill, 2010), which can make a

transformation in identity critical to the long-term cultivation of a healthy relationship

with nature (Haugen, 2010; Mische, 1992). Perhaps this explains why Stern et al. (2014)

reported that some of the most successful programs analyzed in their literature review

credited a holistic learning experience (involving the whole person) with facilitating a

change in student behavior.

      Simms's (2020) theoretical review of the literature explored foundational theories

that influenced how identity has been understood in an environmental education context.

Using social network analysis, Simms identified two primary influencing patterns in the

literature on environmental identity: a social and an ecological context. Social and

ecological aspects of environmental learning have long coexisted as independent

concepts within environmental education, but researchers claim they have seldom been

combined in the literature (Ardoin et al., 2020) or in practice (Monroe et al., 2019). Even

when social and ecological dimensions of environmental education occur together as part

of an official curriculum, teachers have struggled to implement this combined focus

(Borg et al., 2014).

      In agreement with Simms (2020), the best example I could find in the literature of

an approach to environmental education with a socioecological focus was provided by

Williams and Chawla (2016). Williams and Chawla used qualitative analysis to explore

how environmental education programs had an impact on the environmental identity of

18 individuals who had participated in environmental education experiences as children

between 5 and 40 years before the study. Through analysis of program and interview

data, Williams and Chawla traced the participants' perceptions of how their socioecological identity formed through social practices and direct engagement with nature. They found a

> dynamic interplay between young people's experiences of physical and social worlds in the programs … A young person's identity relative to the environment forms through sensory and emotional engagement with particular places … as well as through a sense of belonging to a social group that provides opportunities to develop environmental competence and responsibility (p. 994).

In other words, Williams and Chawla found that learners developed their sense of identity through both social and ecological learning opportunities. The educational programs facilitated the social dimension of the students' encounter with nature in a microcosm of the broader human society and local ecosystems. The resulting relationships with human and with non-human life were both important to the formation of an environmental identity that led to a long-term change in behavior.

Like Williams and Chawla (2016), Gray and Colucci-Gray (2019) recognized the influence of social and ecological learning opportunities among college students in an outdoor education course. Their mixed-methods study focused on identifying changes in students' sense of identity and understand how their sense of identity developed through interaction with their surroundings. Survey data collected before and after the course with the nature-relatedness scale (see Nisbet et al., 2009) showed a statistically significant ($p = 0.002$) increase in the students' sense of ecological identity. A small sample size ($N = 13$) limited the generalizability of this finding, but the same outcome was demonstrated by

qualitative analysis of student reflections and discussions posted to an online forum. Using a narrative approach for their qualitative analysis, Gray and Collucci-Gray noticed several social elements in the student accounts of their emerging ecological identity. These social components included activities like walking, sharing, and other means of co-inhabiting the space with the other learners. They noted that this finding supports the work of Williams and Chawla (2016), whose research showed the entanglement of social relationships in forming a sense of connectedness with nature through sharing direct and embodied interactions in a particular place.

With the exception of the two studies just described, I found little research on programs with a focus on broad-based behavior change or the development of an environmental identity. Likewise, in their literature review of environmental education case studies focused on behavior change, Grilli and Curtis (2021) identified only five (out of 85) published and unpublished case studies between 1982 and 2019 focused on broad-based, long-term behavior change. Instead of holistic interventions, they observed that most of the case studies they found emphasized the least successful behavior change interventions: education and awareness or the distribution of information. They explained this incongruity by noting that broad-based behavior change is difficult to measure and resource-intensive to implement.

Social Dimension of Environmental Identity

Systematic behavior change through environmental education can be linked to individuals developing a strong sense of identity that includes both social and ecological dimensions. The social dimension of environmental identity is informed by the

Anthropocene framework (Crutzen & Stoermer, 2000), which recognizes the impact of human society on nature (Decuypere et al., 2019; Stratford, 2019). Because of this influence, it is important for programs to provide the knowledge and the skills individuals need to relate to both the human society and the ecosystem humans share with non-human life (Wolff et al., 2020).

According to Goralnik and Nelson (2017), it is important to distinguish between individual learning in a social context and learning that pertains to navigating that social context. In a literature review of 131 studies in natural science, policy, and education research and philosophy related to environmental education for children in the Anthropocene, Wolff et al. (2020) highlighted the connection between equipping young learners with social skills and their development of an ability to navigate the influence of social systems on the environment. Jorgenson et al. (2019) elaborated on the significance of this approach in their literature review on climate change and energy education. Their critical review used a transitions framework to emphasize the importance of equipping learners to interact with the social systems that influenced the environment. They recommended framing learners as active participants within a social system, which aligns with the framework of situated learning by inviting active participation in an authentic context as a way of preparing for broader membership in the community of practice (Lave & Wenger, 1991).

In my review of the literature, I found fewer studies related to the social dimension than to the ecological dimension of environmental identity. This disparity of emphasis in research may also be reflected in practice. Borg et al. (2014) used a

questionnaire with a stratified sample of 3229 upper secondary school teachers

nationwide in Sweden to assess their perspective of sustainable development and whether

this varied depending on their subject or the length of teaching experience. Results

showed that teachers' understanding of sustainable development varied depending on

their subject, no matter how long they had been teaching. Across the curriculum, 70% of

teachers indicated they needed further training in order to understand how to implement

education for sustainable development in their instruction. Eighty percent were familiar

with the ecological dimension of sustainability, 50% with the social dimension, and 18%

with the economic dimension, which indicated an overall lack of holistic understanding.

The national curriculum of Sweden considers the holistic perspective to consist of all

three dimensions: social, ecological, and economic. The only other study I reviewed that

separated economic from social dimensions of environmentalism was Grund and Brock's

(2020) study. This approach of separating the economic dimension from the others was

critiqued by Wolff et al. (2020), who suggested that the more common practice of

including economic aspects within the social dynamic of human relationships has less

potential for misuse in a capitalistic context.

Despite the apparent lack of emphasis in research and practice, a focus on the

social dimensions of environmental identity can have an ecological impact. Nielsen and

Ma (2018) developed the idea that authentic connection (i.e., social and ecological

relationships) could be seen as an act of giving, which influences the students'

relationship with each other and with nature. Nielsen and Ma used hermeneutic

phenomenology to understand the 14-day visit of 18 college students and four staff

members to the Great Barrier Reef, which included explicit instruction in generosity.

They developed a theory of giving to self, others, communities, environment, and the

whole to explain how aspects of social and natural ecology could offer the students a

pathway to participation in a more socioecologically friendly way of life, both in their

relationships with each other and with nature. Nielsen and Ma attributed these positive

outcomes in part to the experience of forming a social identity of generosity and openness

toward each other. This finding is similar to that of Williams and Chawla (2016), who

showed that the programs they studied gave the students a strong sense of group identity

and a relationship of respect for the surrounding environment.

Another way that social identity formation may play a role in environmental

education comes through connection to a place. Nelson et al. (2020) identified a

connection between the formation of place meanings and of learning within a community

or seeing oneself as part of the broader ecosystem. The experiences of individuals with

each other in a particular location led to a connection between their experience of

community and their experience of that place. This aspect of place-based social identity

can influence both individuals and groups through an emphasis on the social and natural

learning environment (Simms, 2020) and will be explored in the second section of this

literature review, which focuses the socioecological learning context.

In addition to considering individual identity, some researchers have suggested

that environmental education needs to consider the development of group identity. A

study by Chabay et al. (2019) grew out of a symposium whose purpose was to understand

the role of narrative in relation to identity and collective sustainable behavior change.

Thirty-five participants from 12 countries participated in a 3-day workshop, which produced more than 20 case studies. Chabay et al. published three of these to model how narratives, or stories related to the vision and identity of a community, both reflected and influenced social movements toward environmental sustainability. They found that social identities emerged from social relationships and seemed to play a critical role in collaboration around socioecological challenges.

Collective identities can be helpful, though this is not always the case. Leap and Thompson (2018) analyzed data from two case studies (from Uruguay and the United States) to explore how a strong sense of group identity could enable rural communities to respond effectively to socioecological challenges. In their study, they recognized collective identities emerging from shared ways of perceiving and interacting with the world. They found that the rural identity was interconnected with group solidarity, and these together influenced the ability of the community to adapt to socioecological changes. In their study, the impact was positive, but Leap and Thompson contrasted their findings with other studies that showed a potentially negative influence of collective identity on environmental behavior. For this reason, they suggested it may be important to recognize the ability of a community to learn, to recognize the balance between solidarity and diversity, and to consider how the shared identity impacts individual and community life.

Ecological Dimension of Environmental Identity

The ecological dimension of environmental identity is often framed in terms of a relationship with nature. The concept of relationship with nature has been present in the

environmental education literature since the first issue of the *Journal of Environmental Education*, which included a call by Stapp (1969) for environmental education to contextualize humanity as part of the broader natural system. According to Simms (2020), this ecological component of the identity seems to have emerged from the conservation movement, which recognized both the importance of spending time in nature and of developing a sense of ecological identity. Using social network analysis, Simms traced the most influential definition of environmental identity to Clayton (2003), who called it "a sense of connection to some part of the non-human natural environment [and] a belief that the environment is important to us and an important part of who we are" (pp. 45-46). Williams and Chawla (2016) used Clayton's definition to explain the ecological (in contrast with the social) dimension of the environmental identity, which is why it is emphasized in this section of the literature review.

A person's understanding of themselves within their socioecological context has been found to influence how they engage with nature. Grund and Brock (2020) presented findings from a multiple regression analysis with self-reported data collected from 2564 young people and 525 teachers in Germany using an online access panel. The goal of their quantitative study was to predict sustainable behavior on the basis of several factors. They found that their model explained 25.9% of the variance. Primary influencing variables were connectedness with nature (b = 0.238), emotions regarding sustainability (b = 0.227), and factors related to the student learning experience (b = 0.179). There was no multi-collinearity between predictors suggesting that each one of these may be

important for understanding what an authentic context needs to provide to inspire behavior change.

While some studies have reported a positive relationship between connection to nature and pro-environmental behavior (e.g., Obery & Bangert, 2017), this may not apply to all types of connections. In a critical participatory action research project, Haukeland and Sidsel (2020) explored how the practice of *friluftsliv* (a Scandinavian concept somewhat akin to outdoor recreation) could sometimes cause harm to nature (through misuse) even though it most often contributed to sustainability. The key difference they found between harmful and helpful relationships with nature was in the ecological aspect of the individual's identity. They proposed that the development of an ecological sense of self could transform the way that individuals approached their interactions with nature. In other words, an ecological identity required that the individual recognize themselves as part of nature, not just as free agents interacting with a totally separate ecosystem (see also Cloud, 2017; Goralnik & Nelson, 2017). The emphasis of connection with nature in environmental education was not on the self in relation to nature but on the self as part of nature (Gray & Colucci-Gray, 2019).

Although behavior change is often the goal of environmental education directed toward identity, it is possible that the ecological dimension of an environmental identity has value for its own sake. For the bushcraft practitioners in Fenton's (2016) ethnographic study, a relationship with nature was itself the goal of learning and developing particular practices and skills. Fenton explored the way in which lived experience provided a counterbalance to the separation from nature inherent in many

scientifically driven programs of study. Participants in Fenton's study elaborated on ways of knowing through action and identity, which provide a contrast to learning approaches that set the individual apart from nature for the sake of an objective perspective. Their goal was not knowledge itself (as a static data set) but ongoing participation in the process of knowing through a more intimate connection with nature.

In addition to helping students form a personal connection to nature, environmental education may also be a key part of expanding students' understanding of nature's value independent of themselves. Lin and Li (2018) conducted a study with 31 university students with a goal of understanding how to facilitate a connection with nature – especially with animals. The design of the learning experience included engaging in aesthetics education and communication with community stakeholders about real questions concerning the human-nature relationship. The researchers collected data from online, in-depth focus groups and synchronous discussion boards. Then they coded comments and analyzed personal meaning maps using content analysis. Findings showed that students already recognized human-nature relationships before taking the environmental education course, however, the course changed the way that they understood it by enabling them to see nature in a more complex way. Specifically, the course enabled students to see their relationship with nature in terms of kinship and the sentience/individuality of nature in addition to its wildness.

Relationship with nature is both a goal of environmental education as well as a means of changing environmental behavior, but it is not necessarily a simple construct. Responding to the need for greater understanding of how students form an empathetic

relationship with nature, Goralnik and Nelson (2017) used constructivist grounded theory to analyze a variety of written artifacts produced by students in an experiential environmental philosophy course. The model that emerged from their data included five stages that students follow to make the transition from dualistic to complex understanding: (a) dualism, (b) self-awareness and personal development, (c) social learning and sense of community, (d) full (emotional and cognitive) curriculum engagement, and (e) empathetic awareness, complexity. In addition to this set of stages, the grounded theory analysis by Goralnik and Nelson (2017) demonstrated that students did not necessarily shift from an anthropocentric to an ecocentric perspective during the environmental philosophy field course. Instead, the individuals demonstrated a transformation in their understanding of the human-nature relationship from one of dualism (anthropocentric vs. ecocentric) to one of complexity, recognizing the intersection of human and non-human life within the same ecosystem.

Authentic Learning Contexts

As outlined in the first section of the literature review, socioecological learning opportunities have been found to support individuals (Williams & Chawla, 2016) and groups (Chabay et al., 2019) in cultivating a sense of identity (Haukeland & Sidsel, 2020) that reflects their socioecological interconnection (Goralnik & Nelson, 2017) with nature (Lin & Li, 2018) and with society (Nielsen & Ma, 2018). This second section of the literature review includes a collection of research findings taken from literature related to best practices for environmental education. It is organized around three areas of focus in

the design of an authentic learning context: immersion in nature, learning in community, and holistic practice.

The focus on authentic contexts in this section is informed by a grounded theory study by Bowers and Creamer (2021), which identified authentic contexts (or students' perception of a program as providing an authentic context) as key to students' development of knowledge leading to a change in environmental behavior. It also comes from the conceptual framework of situated learning theory, which positions authentic contexts as the link between the community of practice and opportunities for individuals to acquire the identity or embody the skills of that community (Donaldson et al., 2020; Lave & Wenger, 1991). Like Lave and Wenger (1991), Kyburz-Graber (2013) suggested a shift in emphasis from examining teaching processes and outcomes to understanding the learning processes that are part of environmental education. The three factors chosen to organize this analysis of contextual factors contributing to socioecological learning opportunities emerged through an iterative process of analyzing the reviewed studies.

Immersion in Nature

In this first part of the review of literature related to authentic contexts, I explore the approach to learning through immersion in nature. Humans are a part of nature, which makes immersion in nature an important part of the knowledge-formation process (Marin & Bang, 2018). Marin and Bang (2018) contrasted the decontextualization of scientific inquiry, which they saw predominating formal classrooms, with an indigenous tradition that recognizes the land as the source from which knowledge and action spring. Their

research explored how meaning could arise from community interactions situated in a particular place.

Connection to the land has been found to be vital for supporting both the development of a relationship with nature and a sense of belonging to a community. For example, Williams and Chawla (2016) observed that a young person's identity relative to the environment formed through sensory and emotional engagement with particular places as well as through a sense of belonging to a social group, which provided opportunities to develop environmental competence and responsibility. Programs in their study provided this engagement through social learning opportunities and a location in nature that made larger real-world socioecological contexts more accessible for exploration.

Demonstrating a similar conclusion, a bibliometric analysis of the evolution of "sense of place," conducted by Nelson et al. (2020) on environmental education literature published since 1968, showed the importance of a place in helping individuals form a connection with nature. The connection Nelson et al. found between social experiences and place suggests that the authentic context must be a specific location in which individuals can form emotional attachments through activities, experiences, and co-created meaning.

The type of interactions with nature may be more important than the amount of time dedicated to them (Jose et al., 2017; Stern et al., 2014). Jose et al. (2017) used a method of analyzing student drawing and explanations of their experience with a local ecosystem before and after a field trip to understand changes in student knowledge. Out

of 70 students, the number who included human elements in their drawings of the

ecosystem increased from 4% to 13% after the 4-hour visit, suggesting that they had a

greater understanding of the socioecological connection. The inclusion of human

elements in the drawings may suggest that students had begun to see themselves as active

participants in an ongoing relationship rather than as independent objective observers of a

passive environment. Student drawings also focused on their hands-on experiences,

which the researchers noted were more unstructured and allowed students the freedom to

reach their own learning outcomes. Their observation intersects with the suggestion by

Lave and Wenger (1991) that opportunities for learning may come in a different form

than occasions of instruction.

Connection with nature does not necessarily need to be wholly defined and

facilitated by a human instructor. Learning can take place through uninsulated time in

nature, where students are not separated from its function by digital technology and

modern conveniences (Fenton, 2016). When students have opportunities for direct

contact, nature itself can be a teaching partner helping them develop a sense of

connection to the earth and the ability to appreciate and experience its wonders (Haugen,

2010; Marin & Bang, 2018). Pike's (2018) ethnographic study explored how this direct

contact can be mediated and developed through the use and appreciation of tools and

objects. The learning settings described by Pike were spaces where individuals learned to

listen, attune, align, and learn from nature. Some participants in Pike's study referred to

learning from nature as a teacher or to listening for the voices of the rocks. These ideas

find further support in the research on environmental education collected by Stern et al.

(2014) and Rousell and Cutter-Mackenzie-Knowles (2020), which showed that an affective connection to nature could form through direct interaction with animals, places, real-world problems, and social or ecological systems.

Learning through direct contact with nature can be enhanced when students approach the encounter with a sense of awe, imagination, and wonder. A multiple regression model by Grund and Brock (2020) predicted up to 29% of the variance in pro-environmental behavior. The most influential variable in this model was connectedness to nature, which the authors suggested could be developed further through programs that make space for imagination, wonder, and enhanced ability to process emotions on an identity level. Goralnik and Nelson (2017) also highlighted the importance of these emotional reactions in their grounded theory study. They found that students' experiences of awe and wonder in connection with nature contributed to multiple stages of developing a complex understanding of the human-nature relationship.

Learning in Community

In this second part of the review of literature related to authentic contexts, I explore the approach to learning in community. Learning in community, or a social approach to understanding the learning process, has informed the design of several environmental education studies (e.g., Smith et al., 2020; Ulbrich & Pahl-Wostl, 2019). It may also be an integral aspect of the critical and constructivist pedagogies identified by Kyburz-Graber (2013) as part of the socioecological approach to environmental education. Social influence, especially in a face-to-face setting, can be an especially effective part of environmental education when coupled with a sense of belonging to a

community (Grilli & Curtis, 2021). Grilli and Curtis (2021) described outreach and relationship building as a combination of education with social influence that provides an effective but resource-intensive approach to facilitating long-term behavior change. Grilli and Curtis noted that this approach was most often applied in environmental education programs with the goal of influencing one's overall way of life.

Learning in community can drive behavior change by making use of existing resources and connections. A meta-analysis by Green et al. (2019) of social marketing campaigns for conservation behavior demonstrated two critical aspects of learning in community. First, the process of learning needed to leverage preexisting knowledge, attitudes, and communication channels. Second, facilitating opportunities for interpersonal communication can be the primary driver of behavior change in an environmental learning context.

Learning in community involves a sense of belonging, which contributes to full engagement in the learning process (Goralnik & Nelson, 2017). Goralnik and Nelson (2017) used constructivist grounded theory to analyze student writing samples from an environmental philosophy course that used an experiential learning approach. They found that sense of community was an important part of the group process and emerged in the interplay between the individual and the group. The sense of awe and wonder, which I described in the section on immersion in nature, arose not only from time in nature but also from storytelling. Storytelling seemed to be especially powerful in evoking an emotional response to the natural world. Goralnik and Nelson concluded that this kind of

socially collaborative learning pathway may not be easy to facilitate or follow but could help students reach the goal of a reflective, empathetic relationship with nature.

Storytelling may be influential in supporting the development of connection with human as well as non-human members of an ecosystem. In a mixed-methods study, Lin and Li (2018) examined the relationship between storytelling and a change of attitudes toward wild animals that occurred for 31 university students over the 10 weeks of their participation in a course. Statistical analysis of before and after tests showed that storytelling as a pedagogy had a significant and positive effect on student attitudes toward wild animals, especially if the creature represented was from the local environment. Lin and Li also mentioned that an experience including both science and art, along with the opportunity to communicate with community stakeholders, gave students the chance to wrestle with real questions about their connection with nature.

Environmental education researchers have found that deep wrestling with socioecological problems can be an integral part of the community learning process. Literature reviews by Stern et al. (2014) and Monroe et al. (2019) identified themes of knowledge generation, emotional connection, and diversity of perspectives emerging from intentional discussion that focused on collaboration and real-world problems. Monroe et al. noted that this became especially important when facilitated by the teacher to address misconceptions surrounding controversial issues.

Holistic Practice

In this third part of the review of literature related to authentic contexts, I explore the approach to learning through holistic practice. The socioecological learning context

makes room for holistic practice through invitations to participate (Kyburz-Graber, 2013) and engage the whole person interactively (Stern et al., 2014) in the learning process. Fenton's (2016) research on bushcrafting, its relationship with indigenous knowledge, and its association with transformational learning practices showed how students developed a relationship with the natural world through their actions. Fenton found that the link between knowledge and indigenous practices formed as knowledge became embodied in the individual learner through skilled practice – often in an apprentice-style inquiry process. Pike (2018) explained this in terms of the crafting process where one's whole body engaged in building a fire or threading a basket, using terms like sensual and embodied to describe this experience of learning.

The embodiment of knowledge is part of the indigenous learning tradition, as understood by Marin and Bang (2018), who described reading, walking, and storying the land as a way of building a relationship with non-human life. The purpose of their study was to explore "how knowledge about the natural world arises through joint activity situated in place" (Marin & Bang, 2018, p. 89). In alignment with findings by Williams and Chawla (2016), and Gray and Colucci-Gray (2019), Marin and Bang's framework recognized both land and relationships as key agents in the learning process. Land intersected with learning through movement and interaction, while storytelling supported this process of knowing through the embodiment of learning in a particular place. The embodiment of learning thus seemed to include interaction with a social context as well as with physical tools and activities.

Activities in a holistic practice can be ritualized as part of involvement with the community through a common way of life (Pike, 2018). For example, Pike's (2018) study on the use of tools for practice and experience in a bushcrafting context showed that the meaning and effectiveness of using tools is not just about the physical context but about the social context that provides meaning to the movement. More than this, it is about the entire socioecological context that this is a part of, from the crafting to the interaction with nature (Haukeland & Sidsel, 2020). Real-world learning opportunities can offer students the chance to design and implement solutions to the problems they study (Monroe et al., 2019). Even in the classroom, Noy et al. (2017) found (using a mixed-methods study) that an interdisciplinary approach could provide students with transformational learning opportunities through group work, challenging existing world views, peer learning/exchange, and personal engagement through relevance and the modeling action.

Some opportunities for holistic practice are not based in the context of serious pursuits or highly structured activities. In their comprehensive review of the literature, Wolff et al. (2020) identified play as an essential aspect of learning for both adults and children. They saw unstructured play as helpful in forming competency for interacting with nature and removing the boundaries that seem to separate humans from the non-human world. Both play and serious dialogue with professionals in the field have demonstrated the potential to empower students in their process of self-discovery (Monroe et al., 2019; Wolff et al., 2020). These authors both found evidence within the

literature that active experimentation within a safe environment can be a critical part of helping students develop a sense of agency or ability to act.

Studies on introspective practices in environmental education suggest that not all aspects of a holistic practice need to be directed outward. Gómez-Olmedo et al. (2020) used a meta-analysis to explore the role of mindfulness practices in the development of a student's environmental identity and lifestyle. Their coded data from 18 publications, 12 programs, and 2373 participants showed that mindfulness practices in environmental education programs could help individuals form an emotional bond with their social community. This bond could influence socio-emotional competencies as part of an education for sustainability process. Other researchers have demonstrated the influence of mindfulness on building a connection with nature or developing more sustainable practices (Frank & Stanszus, 2019; Wamsler, 2020), which suggests that an introspective approach may be important to understand further in the context of environmental education.

Self-Efficacy and Bridging Organizations

The first and second sections of the literature review may be summarized by Pike (2018), who observed that a learning context could support the practice and development of skills within a community context as a way of enabling and reinforcing a way of life in connection with nature. It can be difficult, however, for individual practitioners (who might also be teachers) and students to find an authentic context that includes immersion in nature, learning in community, and opportunities for holistic practice (e.g., Ulbrich & Pahl-Wostl, 2019). This third section of the literature review related to key concepts

includes studies on self-efficacy and bridging organizations (Smith et al., 2020), which may play a significant role in assembling the pieces of an authentic context needed to provide socioecological learning opportunities.

An example of the need for a bridging organization can be seen in the work of Ulbrich and Pahl-Wostl (2019), who conducted a qualitative case study to understand the learning interfaces and methods of self-organization in permaculture education. They interviewed 12 teachers from the largest permaculture education body in Germany and discovered that the community had shared values and educational/organizational structures but struggled to connect individuals with coordinated learning activities. This struggle highlighted a situation where a bridging organization could facilitate learning by providing opportunities for dialogue, collaboration, knowledge transfer, and conflict resolution (Smith et al., 2020).

Building on previous research, Smith et al. (2020) developed the idea of bridging organizations in an environmental learning context through two case studies, which examined the fishing and the forestry industries in Chili. Seeking to understand learning processes within the tensions of a social and ecological system, they collected publicly available data and spent a year of fieldwork visiting sites and conducting 70 interviews across the industries. They found that social learning was a useful framework for understanding the flow of knowledge and that bridging organizations play an important role in facilitating this flow. Only the forestry industry was served by a bridging organization, which proved to be an essential part of enabling the flow of information among a diverse group of stakeholders. For this reason, the researchers suggested that

their findings raised the question of whether knowledge itself led to the transformation of practices or whether it was access to a process or flow of ongoing learning that supported lasting change (see also Gould et al., 2019).

A less formal example of a bridging organization can be seen in the function of bushcraft gatherings in their relationship to indigenous knowledge (Fenton, 2016). Fenton's research came from an established history within bushcrafting, which enabled a broad range of data collection from interviews, online questionnaires, and fieldwork in Britain, North American, and Sweden. This research suggested that bushcraft provided a kind of third space or community link between indigenous knowledge and transformative practices. One aspect of bushcrafting emphasized by Fenton's research was the need for both internal and external transformation. In other words, the bridging organization not only created opportunities for developing one's practices but also for developing a sense of identity in relation to those practices and the natural context in which they were situated.

Program organizers are not always the primary providers of the learning experience. A consistent and underlying theme in the literature on environmental education is the idea of self-efficacy (Donaldson et al., 2020; Stern et al., 2014), self-regulated learning (Cloud, 2017), and self-determination (Davis et al., 2020). The ability to direct one's own learning process is not always treated as an outcome of environmental education but rather as a supportive part of the learning process both with adults (Donaldson et al., 2020) and with children (Davis et al., 2020). On the other hand, the literature reviewed by Rickinson (2001) and Stern et al. (2014) indicated that preparation

and follow-up work assigned by teachers and facilitators can be an important part of helping students get the most out of their experiences in nature. Further evidence for the value of facilitation comes from research by Jose et al. (2017), which showed that the value of outdoor field experiences depended on the students' prior knowledge (often gained in the classroom) and experience. For this reason, Jose et al. suggested that there is potential for better cooperation between formal and informal learning environments.

Finding this balance between formal instruction and informal opportunities for self-directed learning can be important for the socioecological identity formation process. A mixed-methods study by Gray and Colucci-Gray (2019) provided evidence from college-age students to suggest that a flexible and adaptive pedagogy was a significant factor enabling the student cultivation of self-understanding within the learning environment. However, a literature review by Rousell and Cutter-Mackenzie-Knowles (2020) described a majority of published research on environmental education as representing top-down, institutionally driven, behavior-change approaches. There is a need for more studies like those of Davis et al. (2020), whose research identifies a kind of cooperative construction of the learning experience: an interplay between teachers, students, and the learning context. In an ethnographic study of self-determination, Davis et al. collected and coded three years of observations, field notes, and focal participants from children and young-adult educators in an after-school club. They found that within a liberating learning environment, self-determining acts of confrontation or shifting the conversation allow students and their classmates to take ownership of the learning

process. These acts of self-determination were shaped by and helped to shape the learning environment.

Summary and Conclusion

In summary, this literature review outlined several factors that may contribute to the development of a student's environmental identity and a subsequent change in their environmental behavior. The first part of the literature review explored the goal and purposes of environmental education with a closer examination of the relationship between environmental identity and pro-environmental behavior. Environmental identity was then developed in terms of social and ecological dimensions. The second section of the literature review elaborated on three elements related to an authentic learning context: immersion in nature, learning in community, and holistic practice. Finally, the third section explored the balance of learning and instruction as shared by bridging organizations and self-efficacy.

In the search for empirical literature, it became apparent that an approach to environmental education that considers both the social and ecological aspects is not common. Although both aspects can be seen in the literature, few studies have examined them together. The literature in this review that most effectively combined these two factors all took place within a formal education context or with children. It is not known what the socioecological learning experience looks like in an informal setting designed for adult learners. As suggested by the Anthropocene context, there is a need to understand how individuals form a sense of identity through which to navigate both social and ecological relationships in a way that benefits nature and humanity. The gap

addressed by this study is the lack of empirical literature related to socioecological learning opportunities.

In Chapter 3, I will describe the methods chosen for this study. Along with a description and rationale for using a basic qualitative design, I will reflect on my role as a researcher and detail methods of sampling, participant selection, data collection, and analysis. I will also examine issues of trustworthiness and ethics that relate to this study.

Chapter 3: Research Method

The purpose of this qualitative, basic design study was to explore how first-time adult participants described their experiences of socioecological learning opportunities in a short-term, immersive, community-based environmental education program called AxSol (a pseudonym). The value of the integrated social and ecological approach taken by AxSol is unclear, in part because few empirical studies have described or evaluated programs that offer socioecological learning opportunities. This chapter includes an overview of the research design and rationale, along with a reflection on my role as a researcher. It then lays out the methodology I followed for the study, including details of participant selection logic, instrumentation for collecting interview data, and a data analysis plan. The chapter closes with a review of trustworthiness and ethics issues.

Research Design and Rationale

The research question addressed by this study was as follows: How do first-time adult participants describe their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program? The phenomenon explored in this study was socioecological learning opportunities as an approach to environmental education that integrates both social and ecological dimensions of learning. Applying the conceptual framework of situated learning theory (Lave & Wenger, 1991) to environmental education (Donaldson et al., 2020), this study used the lens of community of practice, authentic context, and embodiment/identity to understand student experiences with the phenomenon.

Basic Qualitative Approach Rationale

This study involved a basic qualitative design to explore how first-time adult participants described their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program. A basic qualitative approach uses rich, thick, descriptive data to synthesize a shared understanding of the phenomenon (Patton, 2015), which can help give it some definition or facilitate a more complex understanding of the phenomenon. Qualitative research methods enable the researcher to understand how people interpret the meaning of a phenomenon through their experiences (Merriam, 2002). The benefit of using this approach when the phenomenon is a program comes from how it enables the researcher to remain open to unanticipated outcomes (Patton, 2015). This openness aligned with my desire to explore whatever outcomes and processes were influential for the individuals who experienced the phenomenon of socioecological learning opportunities.

Further, the basic design frames a research inquiry without any explicit theoretical, philosophical, epistemological, or ontological foundation and can have pragmatic value for informing potential areas of program improvement (Patton, 2015). As long as one can make a case for using a particular element of a research design, there is nothing to prevent an amalgamation of the best tools each has to offer (Patton, 2015). This perspective enabled me to maintain a unique combination of positivist ontology and constructivist epistemology. I considered the phenomenon to be real and knowable but attempted to acquire this knowledge through a growing understanding of diverse individual experiences. In other words, the phenomenon (socioecological learning

opportunities) was a real thing that people have experienced in a diversity of ways, and I expected that the diversity of insights would help me understand the phenomenon in ways that may help to improve the program.

The approaches of phenomenology, complexity, and case study were not chosen for the study, though they did help to shape my understanding of how to implement basic design more effectively. My consideration of case study research methods highlighted the bounded context (Yin, 2018) of AxSol in which I studied the phenomenon. Phenomenology informed my construction of the research question around students' experiences of the phenomenon rather than the phenomenon itself. According to Merriam (2002), phenomenology is part of all qualitative research designs, which means it is possible to use a phenomenological perspective to capture data about people's experience of the world, even when a phenomenological research design is not chosen (see Patton, 2015). Finally, Patton (2015) outlined a relationship between complexity/systems theory and the framework of communities of practice, which reinforced my choice of situated learning theory as the framework used in this study and suggested the potential for understanding the phenomenon of socioecological learning opportunities as a complex non-linear system of individuals and interactions whose value lies in the relationship that forms among the individual parts.

Role of the Researcher

I was the sole investigator in this study. In addition to framing the study, I identified participants, conducted interviews, analyzed data, and reported the results. My role was not only to analyze the participant data but also to analyze my own responses to

the research process as the primary instrument of data collection. As the primary

instrument of data collection, I needed to be aware and transparent with myself and future

readers about my involvement with the program I was studying and about any potential

biases that may have been present as a result of my experience and interactions with

stakeholders.

My Roles of Participation and Observation

My first introduction to AxSol was as a first-time participant in the 2019 program,

which I studied in this dissertation. Although I did not take notes at the time, I did

explore its unique educational features throughout my experience, which led to my

interest in understanding its unique emphasis on integrated social and ecological learning

opportunities. Shenton (2004) suggested that this kind of early familiarity with the

program can help lend credibility to the study's design. I attempted to reduce the

potential of bias from my prior experience by using interviews (see Appendix A for the

interview protocol and questions) rather than observations, as interviews call for

researchers to faithfully report others' perceptions rather than their own impressions of

the phenomenon (Rubin & Rubin, 2012). My prior experience may have also enabled a

greater level of researcher presence in the interview dialogue (Ortlipp, 2008) because I

was aware of the context of the experiences potential research participants may describe.

This also meant I was able to focus my probing questions on participant experiences and

perspectives rather than my need to understand the setting.

Personal and Professional Relationship with Participants

There were no relationships involving power dynamics, but there was a chance that I would have a pre-existing personal relationship with some of the participants in this study because of meeting them through AxSol or living in the same local community. The relationship of co-learner and friend may have had the potential to introduce bias into the research process. If participants were aware of my experience with the program, there may have been some tendency for them to frame their own stories in a way that met whatever they perceived my expectations might have been as a researcher with an insider perspective (Myers & Newman, 2007). For this reason, the interview guide (see Appendix A) opened the interview with a statement that there are no right or wrong answers (Shenton, 2004) and that I valued the unique perspective of the individual research participants.

Another challenge of conducting interviews with people who may be from my community came from the personal need to build rapport with people I may contact again. I addressed this need by following the advice of Patton (2015) and Rubin and Rubin (2012), who suggested it could be helpful to see the research participants as people who are partners in research rather than as data points. Additionally, I designed a clear interview protocol to support a personal and professional focus on collecting the high-quality data I needed for this study.

Researcher Bias and Other Power Dynamics

There was potential for researcher bias from two primary sources. First, I had my own experience of learning within AxSol, which is how I became familiar with its unique

approach. I also carried an innate bias toward seeing innovation as an improvement when it may also be more of a barrier to learning. Second, I had relationships within the broader community of people who were familiar with AxSol and may have subconsciously wanted this study to demonstrate its strengths and minimize its weaknesses. However, I recognized the value of insights I could bring as a researcher by accurately representing the perspectives of participants in the study no matter what they said. Another method of overcoming researcher bias involved using a journal to record my own evolving thoughts (Ortlipp, 2008). I kept these reflections separate from the coding journal for occasional review with my committee for evidence of bias in reporting.

There was also potential for researcher bias from my application to join the board of AxSol. When I first began the study, there was a chance I might be invited to join the board. Although I was not, I had ongoing conversations and personal connections with several board members. For this reason, my initial conversations about this study with the executive director and the board outlined the need for me to maintain integrity as the researcher by reporting findings as they emerged whether these were helpful or harmful to the program's reputation. We decided to accommodate this need by maintaining the confidentiality of the program through the use of the pseudonym AxSol. This confidentiality aimed to help shield the program from the potential impact of positive or negative findings, which gave me greater freedom in analyzing and reporting on the phenomenon of socioecological learning opportunities. As a further safeguard, I asked

my board liaison to review the findings for anything that seemed too harmful or intrusive to publish without risk to the organization.

Methodology

In this section of Chapter 3 I describe the methodological steps that I used in the execution of this study. It includes details of the participant selection logic, instrumentation, data collection tools and procedures, and the plan for data analysis.

Participant Selection Logic

Population and Sampling Strategy

I used a purposeful sampling strategy to gather data from first-time adult participants who were exposed to the phenomenon of socioecological learning opportunities as students in the 2019 AxSol program. Although the learning experience of AxSol was open to participants of all ages, separate tracks were available for children and teenagers, which indicated that the phenomenon under study was designed for adult learners. For this reason, I chose to focus the interviews on the adult student population. Future research may explore the unique elements of the program focused on younger learners.

I used criterion-based purposeful sampling to select a relatively homogenous group of research participants whose experiences were most likely to provide rich and thick descriptions of the phenomenon under study (Patton, 2015). I offered a $20 gift to encourage participation by those who may not have been motivated by strong negative or positive feelings about their experience. This approach may have helped avoid self-selection bias by those who were either pleased or angry about their experience.

Selection Criteria

Interested participants completed an online screening form that I used to determine if they met the criteria for participation in the study. I was able to view their responses and select from the pool of available participants. All participants were required to be adults. Selection preference would go to those who said that 2019 was their first experience with the program, as my conversations with prior participants indicated that returning students may have different motivations and expectations than newcomers.

Another screening question asked about any roles that the individual had in the 2019 program. My conversations with former program staff suggested that volunteers, staff, or teachers most likely had a unique experience of the community of practice because they were not only part of the learning community but also part of communities within the larger AxSol community that shared responsibility for supporting the program operations. If I had enough interested participants, I would invite only individuals who had the singular role of student rather than trying to get a representative stratified sample of the various roles.

Since there was potential that the amount of exposure to the phenomenon had influenced student experiences, the screening form asked participants to indicate the number of days they were part of the program. If the pool of interested participants was large enough, I preferred to interview those who were part of the program for more than 3 days. However, I was also open to including students with less time in the program, as Jose et al. (2017) found that students could have a profound learning experience in a natural setting with just a few hours of participation. Including students with a diversity

of exposure to the socioecological learning opportunities may have provided unique insights into the role that time plays in the quality of this learning experience. However, my conversations with program staff discouraged stratified sampling relative to the number of days students participated in the program, as there were no records of how many individuals might fall into each category. In addition to the screening form, I used the interview to collect information about the length of the students' exposure to the phenomenon.

Number of Participants

The goal of using interviews was to gain an in-depth understanding of the phenomenon through the experiences of the participants. The number of participants forecasted to be interviewed for this study was originally eight to 12. The lower limit of eight was set with reference to traditional committee preferences for sample sizes of at least 10 and previous studies using homogenous samples and a narrow scope, which showed an adequate level of data saturation within the first five or six interviews (see Guest et al., 2006; Mason, 2010; Patton, 2015). The upper limit was set by my capacity as a researcher and the recognition that it would not be ethical to take people's time for interviews if saturation for the study had already been reached. Saturation occurs when existing themes address the research question and additional data no longer leads to additional themes or patterns (Burkholder et al., 2016). If it became apparent after the first eight interviews that more depth or breadth of data was needed to provide the desired level of insight with regard to the research question (Fusch & Ness, 2015), I would invite additional participants until I reached saturation or the upper limit of the sample size.

Recruitment Procedures

Procedures for identifying, contacting, and recruiting participants began with a short announcement sent as part of a monthly newsletter from AxSol to nearly all former program participants. Admission to the learning experience was purchased and distributed online, so the newsletter goes to everyone that has not opted out of further contact by the organization. The announcement included a short description of the study and an invitation to express interest by filling out the online screening form that I used to see if participants meet the criteria for selection. This form also collected email and phone contact details I could use to extend a formal invitation to interview. This form was open online until the end of the interview process, and qualified participants were purposefully selected from the available pool at any given time.

All former students from the AxSol program were invited to express interest in the study, but a personal invitation to interview over phone or video was sent only to a selection of those who met the criteria for participation. This strategy aligned with the observation by Rubin and Rubin (2012) that people are more likely to respond to the invitation if it is specifically sent to them rather than mass targeted to the whole group. Participants who met the study criteria received a direct email invitation (see Meho, 2006), including a more detailed description of the study and a request to review the consent form. The consent form included details about the study, expectations of the participant, and details about compensation. Participants who agreed to the consent form replied with suggested dates and times to schedule the interview. If they did not reply

within one week, I followed up with a phone call or email to see if they had any further questions about the study and to confirm their interest in participation or lack thereof.

Saturation

Sample sizes in a qualitative study should be adequate to produce data saturation, or thick and rich data (Fusch & Ness, 2015) that sufficiently answer the research question (Burkholder et al., 2016). According to Fusch and Ness (2015), saturation is measured in terms of participant perspectives, not researcher interpretations. Mason (2010) identified several criteria that can help the researcher understand the relationship between saturation and sample size, including the scope of the study, research design, interview quality, and homogeneity.

I intentionally responded to these criteria in the design of this study through the selection of a narrow scope and a basic design. I also focused on interview quality through extensive review and development of the interview questions and the interview guide (see Appendix A). However, in order to meet the assumption of homogeneity (Patton, 2015) with regard to the student experience, I needed to have an adequate sampling pool. Many of the people who may have wanted to participate in the study out of goodwill were likely returning participants or part of the volunteering or teaching community at the program. If I did not get a large enough pool to screen them out, I may have had to include these participants, which would have made the sample less homogenous. A less homogonous sample would require more interviews to reach a similar level of saturation.

Based on the criteria of homogeneity, narrow scope, basic design, and high-quality interviews (Mason, 2010), it was possible this study might reach saturation with six or fewer interviews. An example of this relationship between sample size and saturation can be seen in a study by Guest et al. (2006), which found that almost all the codes from their interviews emerged within the first six studies. Guest et al. used consensus theory to validate this finding because it suggests that a high level of accuracy can be reached with as little as four participants who are experts in their field. For this reason, I designed the research question for this study with a focus on the area of expertise for each individual participant, which was their experience of the phenomenon and the language they used to describe it.

Instrumentation

I used semi-structured interviews over video conference calls with to gain insights into the experiences of students who were part of the AxSol program in 2019. Interviews offer researchers a means of understanding the student experience and gaining the etic perspective they need to represent the phenomenon in the words of the participants (Seidman, 2006). Lave and Wenger (1991) emphasized that there can be a clear difference between the intention of the organization providing instruction and the actual learning experiences of students. Open-ended interview questions allowed me to focus on the learning experience by creating an opportunity for individuals to share their perceptions of the phenomenon in their own terms (Turner, 2010). The interview questions were designed in association with the literature review and the conceptual framework of situated learning theory (Donaldson et al., 2020; Lave & Wenger, 1991)

and the socioecological approach (Kyburz-Graber, 2013) to focus the participant on aspects that may be important to understanding the phenomenon.

The data collection instrument (Appendix A) was an interview protocol I created with questions, reflexive spaces, and opening and closing procedures. In order to maintain a clear focus throughout the interview, the instrument was designed to include a reference to the elements of the literature review and conceptual framework that informed each question. I created a space between questions to fill with notes and observations as I moved with a participant through the questions from introduction to conclusion. The protocol also included a dedicated section for me to personally debrief, noting any significant moments, my reaction to the interview, and my reflections. The purpose of this high level of reflexivity was to recognize the role that I play as the primary instrument of data collection and by helping to account for my changing perceptions throughout the research process (Merriam, 2002; Ortlipp, 2008).

The interview guide was tested for content validity in multiple ways. The questions were developed and peer-reviewed with PhD scholars and faculty to look for clear phrasing, hidden assumptions, leading questions, association with the research question, and overall flow. Staff from the AxSol program and a faculty member of the dissertation committee from Walden University also reviewed the instrument. I also conducted two practice interviews with friends who participated in the 2019 program to make sure that the questions made sense to potential research participants and contributed the data needed to answer the research question.

Data Collection

I was the sole data collector using semi-structured interviews to collect data from former students who were eligible to participate in the study. Interviews were scheduled with invited participants when they returned the consent form. All interviews took place over video using Zoom, which ensured consistency in data collection methods. In addition to recording the interviews with my phone and with a backup audio collection device, I typed notes in the interview protocol using word processing software on my computer. These notes included key observations and ideas that stood out to me during the conversation.

Digital interviews were chosen at the request of the partner organization, which preferred video or phone conferencing instead of face-to-face interviews to protect the safety of their former students during the Covid-19 pandemic. I offered participants the option of voice or video interviewing because I recognized that some students from the program may not have had access to sufficient internet speeds to participate in video conferencing. In addition to giving researchers access to participants who may be hard to reach, phone interviews can make people feel an increased sense of anonymity, which may enable them to share more personal details about their experience (Opdenakker, 2006).

Before joining the interview, participants completed a process of informed consent, which began when they receive an email invitation to interview. They provided consent by reading the details of the study and responding to the email with the words "I consent." They were also asked to include potential dates and times for scheduling an

interview. I responded with a confirmation email, but research participants could still withdraw consent and choose to discontinue the interview at any time. Service disruption during the interview itself would not be considered a withdrawal of consent, but on resuming the interview, the participant would be asked to consent to proceed. To help maintain confidentiality, no names or signatures were collected as part of the informed consent process. Interviews were designed to last between 45 and 90 minutes depending on the interviewee's depth of sharing and the number of probes used to gain adequate answers to the questions.

The interview closed with a thank you, a reminder of confidentiality and the study's purpose, and a notice to watch for a follow-up email. The first follow-up email was supposed to be sent the same day of the interview. It included thanks for participation, a reminder of confidentiality, a notification of next steps (transcript review and receiving their thank-you gift), and contact details if they wanted more information or needed help from the institutional review board (IRB) or from professional counseling. The message also reiterated that my research was being conducted independently of the partner organization and provided details to contact me in case of any questions or concerns after the interview.

The next follow-up email to participants included their interview transcript and any follow-up questions I might have. The transcript did not include my personal notes or impressions, only the verbatim transcript of the recording and a possible request for clarification. I also notified participants that I might contact them to request a short follow-up interview. The final contact with participants was to share and celebrate the

results of the study. Participants in the study were encouraged to connect with the program to say thank you or offer their insights about how to improve the experience. Those who were not selected to interview as part of the study also received this final email announcement along with my expression of gratitude for their support of the project.

Data Analysis Plan

I was the sole analyst of the data for this study. Data for this study included a verbatim transcript produced from the audio recording of the interviews. All the interviews were automatically transcribed by Zoom, which meant my first interaction with the data was a review of the transcript. While cleaning the transcripts, I made notes in the margins and highlighted the text with my impressions, thoughts, and memories as the transcription progressed (Halcomb & Davidson, 2006). Data analysis followed an open coding process in search of emergent themes (Saldaña, 2016), but I also looked for evidence of codes suggested by the theory of situated learning. Instead of following my initial plan to complete multiple rounds of coding in Microsoft Word and transfer the data to Airtable (https://www.airtable.com) for analysis, I coded only one interview in Microsoft Word. I then purchased access to MaxQDA for transcript cleaning, coding, and analysis. Details of this decision are included in Chapter 4 under Coding Process.

Issues of Trustworthiness

Issues of trustworthiness play a key role in maintaining a high level of research quality. Lincoln and Guba (1985) identified four elements of trustworthiness for qualitative research: credibility, transferability, dependability, and confirmability. I

address each of them in this section. Although it is possible to describe a variety of techniques associated with trustworthiness, it is up to the researcher to embrace their principles and follow their procedures. Indicators of trustworthiness depend upon the researcher to achieve their goal (Ravitch & Carl, 2016). Thick descriptions, member checks, reflexive analysis, and other tools can bring clarity and transparency to the research process. However, the trustworthiness of the study still ultimately depends upon the researcher's commitment to making good use of these strategies.

According to Ravitch and Carl (2016), qualitative research emphasizes the dutiful representation of the experience and perspective of the research subject. However, Rubin and Rubin (2012) recognized a balance between saying what the participant sees and saying what the researcher sees. There is potential for abuse in the imposition of an etic, or external, interpretation of a phenomenon in a qualitative study, but it is pointless to pretend that the researcher has no perspective. Thus, I saw a clear, reasoned, and transparent interplay between myself as the researcher, the methodology, and the research participants as potentially the most important part of developing a trustworthy outcome.

Credibility

The credibility of this study was based on a careful design that helped to ensure that the data collected could answer the research question (Burkholder et al., 2016). The study's internal validity was based on a clearly laid out design, a thorough vetting of alignment, and the use of extensive reflexivity to make sure that the findings of the study represented the views gathered from participants (Anney, 2014). The credibility of the data collection method came from the development of interview questions in direct

connection to the framework and other studies exploring similar phenomena. The interview questions were also revised multiple times in response to feedback from a dissertation committee member familiar with the study, from peer review by other graduate students, from expert review by program staff, and from practice interviews with friends who qualified to participate in the study.

Transferability

The transferability of findings depends on a thorough description of their context that others can use to relate to their own setting (Patton, 2015). Thick description, according to Burkholder et al. (2016), includes details of the setting, participants, and the evidence to support findings. Although my description of the context was somewhat limited by the need to maintain program and participant confidentiality, I included as much detail as possible when describing the study location and the participants along with a thorough explanation of the research design. This information should allow future researchers to determine the similarities between AxSol and other settings.

Dependability

Dependability requires consistency and clarity surrounding the research design, sampling, data collection, analysis, and reporting process (Burkholder et al., 2016). The details of this study design have been thoroughly outlined to enhance its potential for replication in other contexts. I included a detailed description of the research design and data collection/analysis process. I also built an audit trail through ongoing reflection on the research design process and my experience and evolving understanding of the phenomenon. One example of this can be seen in the interview guide, which included a

section to record my personal reactions, reflections, and interpretations as the interview proceeded. It also included reflexive exercises that preceded and followed the interview to report on the state of the research study and researcher. I also kept an audit journal in the form of a memo and coding comments within the MaxQDA software. These were shared with my dissertation committee throughout the data analysis process.

Confirmability

This study was designed with a deep level of reflexivity and responsiveness that helped ensure findings were linked to data rather than just the opinions of the researcher (Patton, 2015). In addition to a commitment to sharing the perceptions of participants in their own words, I also diligently recorded my own evolving thoughts and perceptions throughout the data collection and analysis process, adding to the memo that already contained records of my progress through problem selection, literature review, and proposal development. This audit trail provided transparency about my own process as the primary data collection instrument and helped to disentangle the inevitable overlap between the etic and emic perspectives. For this reason, it should be possible for a different researcher to reach the same conclusions following a similar research design.

Ethical Procedures

Participant recruitment and data collection did not commence until an ethics review and approval of this study was provided by the IRB of Walden University (Approval # 04-05-21-0985150). To facilitate a clear, consistent, and considerate research process, I designed all recruitment and interview materials in advance and shared them with the IRB. Recruitment materials made clear the purposes of the study

and the reason I was asking the particular participant for an interview. No unnecessary information was requested in the screening form, which was hosted on a password-protected platform. The invitation email clearly stated that I was an independent researcher conducting a study that may benefit the program, but that would not impact the participants' relationship with the program. Students were not required, coerced, or deceived into participation. Participants provided consent by reading the modified Walden consent form and then proceeding to schedule and participate in the interview process. Consent was reaffirmed at the beginning of the interview process as outlined in the interview guide.

There was no risk inherent in this study other than what participants may have encountered in normal everyday activities like stress or discomfort over the voluntary disclosure of personal information. However, participants were also notified that they could withdraw from participation at any point and were invited to inform the researcher if they experienced any discomfort throughout the recruitment or interview process. In order to protect participant privacy during voice interviews, the confirmation email encouraged participants to find a secure and comfortable space without distractions. The only power dynamic at play was the researcher-participant dynamic, which was somewhat addressed through a greater level of presence in the interview process (Ortlipp, 2008). There was no conflict of interest.

Data collection, management, and use details were shared with participants as part of the consent process and introduction to the interview. Interview recordings and participant transcripts were labeled alphabetically and stored separately from personally

identifiable information. I was the only one with access to participant data, which is being

stored in a secure, password-protected location following preservation procedures

recommended by the Walden IRB for at least 5 years until it is deleted. The key that

linked participant data to contact details was destroyed upon completion of the study to

further protect the confidentiality of research participants. Reporting of data proceeded

with pseudonyms for both the organization and participants.

To make it easier to find eligible participants for this study, I offered a gift of $20

to the study participants who were selected for the interview. The rationale for doing this

was that it might encourage more interest from students who had a neutral perception of

their experience with the phenomenon and were not motivated by strong positive or

negative feelings they want to share. Details of this gift were included in the consent

form, and the email following the interview was designed to facilitate the transaction

through a mailed or digital transfer.

Summary

This chapter included an overview of the research design and rationale, along

with a reflection on my role as a researcher. It then laid out the methodology I planned to

follow for the study, including the participant selection logic, the instrumentation for

collecting interview data, and the plan for data analysis. The chapter closed with a look at

issues of trustworthiness and ethics.

In Chapter 4, I will report on the implementation of this research plan. This will

include a review of the methodology that denotes any intentional or unintentional

changes to the methodology from the research plan in Chapter 3. I will also revisit issues

of trustworthiness and describe the major findings of this study.

Chapter 4: Results

The purpose of this qualitative, basic design study was to explore how first-time

adult participants described their experiences of socioecological learning opportunities in

a short-term, immersive, community-based, environmental education program. In this

chapter's first section, I describe the data collection setting and the participant

demographics. Then I provide a detailed look at the data collection, data analysis, and

methods of trustworthiness employed throughout the study. Finally, I present the results

of the study organized around themes related to the research question.

Setting

All the interviews took place using Zoom. The scheduling email included a

request for participants to find a quiet, secure location free from distractions, but each

person chose their own setting for the interview. I observed or learned that they joined the

interview from home, the office, school, and/or outdoors. Because the 2020 AxSol (a

pseudonym) program was canceled due to Covid-19 restrictions on mass gatherings,

participants reported on their experiences from the summer of 2019, which took place

nearly 2 years prior to data collection. Four of the participants mentioned that they

prepared for the interview by reflecting on the sample interview questions I had sent,

making notes, or collecting artifacts from the experience to help them recall their

experiences. One of the participants, Chen (an alias; all participants are introduced in the

Demographics section), reported a stressful circumstance the morning of our interview,

which may have influenced Chen's responses. I offered to reschedule, but Chen asked to

continue with the interview as scheduled.

All participants had experienced the learning setting in 2019 and aside from an occasional newsletter from the organization were likely not aware of any changes in the setting. Further details of the learning context have been provided in this section and as part of the first theme in the Results section of this chapter. The following description of the learning environment experienced by all participants includes a brief introduction to the program and a description of learning activities framed in the words of participants.

For over a decade, the primary offering of AxSol has been a 3-day program, similar to a festival, where several hundred participants and dozens of teachers camp together on a beautiful, remote property to practice their crafts, share their knowledge, and forge connections with others from the local community or region. The goal of the program in 2019 was to provide opportunities for participants to cultivate the skills they need for living well with each other and with the earth. One participant, Avrey, described their first impression as "just a bunch of down-to-earth like-minded people who got together to enjoy kind of this beautiful little place they had, and you know, do some self-driven exploration and learning." When asked about where this learning takes place, another participant, Flynn—the only participant in this study who also served as a teacher at AxSol (an anomaly for a first-time participant)—replied,

> Oh, just weird places … A lot of times, people would just be having offhand conversations. And lots of learning just everywhere, like smatterings of learning everywhere, anytime, anyplace it's almost exhausting you know because it's so much learning. And it can happen at any time. And it can happen like from anyone it can happen from someone who it's their first time, and it can happen

from someone who's been you know doing it for 30 years. It could happen where

you least expect it.

After breakfast and early morning activities, each day opened around 9:30 a.m.

with the entire learning community gathered around a fire to share songs, stories, class

updates, and important announcements. Then individuals were free to choose from a

selection of classes and activities offered by teachers and practitioners on a diverse range

of social and ecological subjects. For the sake of confidentiality, the course list has not

been provided in this study. Some courses required participants to purchase materials to

work with. Others had a limited number of seats available so that the instructor could

maintain an adequate level of individual attention. For this reason, when course

descriptions for the next day were posted each evening, there was often a rush to sign-up,

especially for some of the classes with limited seats. One of the participants who had a

child with them at the program, Echo, called it a "feeding frenzy." However, they also

noted that most teachers would let you join their class if they had enough tools and

materials available.

When I first attended AxSol as a volunteer and participant in 2019, the program

had just completed a transition in organizational structure, which included the adoption of

an explicit socioecological focus. As far as I could determine from informal

conversations with staff, previous offerings of the program had been designed around an

ecological focus, so the social focus was the newer emphasis. However, the themes of

culture and community of practice, presented in the Results section, suggest that both

social and ecological values were deeply engrained in the community even before the

program began to emphasize them through its stated purpose and the curated course list.

I observed that the 2019 course list presented a somewhat balanced opportunity to

explore both social and ecological topics. Avrey commented on the diversity of courses

available, saying, "I think the kind of skills and classes that they put together, um. I don't

think any of them didn't focus on either a more clear link to the environment or a more

clear link to other people." In addition to the courses, participants noted that the culture

and the way of life they saw modeled by the instructors supported the socioecological

learning opportunities both in terms of the experience and in terms of what they learned.

The decision to study AxSol as a program offering socioecological learning

opportunities was fortuitous, as all the participants I interviewed agreed that the program

felt well organized. As a result, the credibility of the participants' perceptions may have

been enhanced along with the trustworthiness of the findings. According to Drew, who

had experience with facilitating large events, there was not much that could have been

done to improve the logistics of the program. Another participant, Flynn, observed a

multitude of volunteers and support staff, which likely enabled the administration to be

more effective in their work. At the same time, Blair noted that it "felt like a very down-

home, grassroots, put-together-by-the-village type of event." Avrey summarized this

apparent contrast between organization and informality:

> This might sound kind of funny, but if you, um, stereotype the kind of people that
>
> go to AxSol, you wouldn't necessarily think that they're good organizers. But I
>
> have to say the event was really well organized. You know, there was porta-

potties, there was plenty of other places to take care of your other physical needs [i.e., outdoor kitchens, water access]. It was well organized. The scheduling … for the classes, that went smoothly. So I was, I guess, pleasantly surprised by just how well things were run. And how well everybody behaved, and just you know nothing bad seemed to happen.

Demographics

In this section, I describe the volunteers who participated in this study, including how they met participation criteria, the commonalities they shared, and any potential bias that may have been introduced by their preferences relative to program participants who did not respond to the research announcement. For the sake of confidentiality, aliases have been used, and any personally identifiable information has been revised or removed with careful consideration of how these changes might influence the findings of the study.

The participants in this study represent a purposely selected, homogenous sample. The two criteria for participation were adult students and participation in the 2019 AxSol program. To identify qualified participants and achieve a higher level of homogeneity, the study used a screening form to give preference to those who had only the role of a student, who attended for the first time in 2019, and who stayed for at least 3 days. The only individuals who responded to interview requests were those who had attended for the first time in 2019. This led to a greater level of homogeneity but also to a narrower scope as the findings only represent the experiences of first-time participants. Participants Echo and Flynn (see Table 1) presented unique perspectives because they held the

additional role of volunteer and teacher, respectively, in their first year. While interviewing, I discovered that they had also participated in very similar events that Flynn confessed slightly colored their memory of the experience with AxSol. For this reason, I was careful to ask follow-up questions throughout the interview to differentiate between their descriptions of these other experiences and what they associated with socioecological opportunities presented by AxSol.

There were several commonalities among the volunteers who interviewed for this study. Three self-identified as introverted. The others did not indicate one orientation or another. Four of the six participants mentioned that they had separated from a significant other between a week and a year before they attended the program and mentioned an interest in community as one of their motivations to attend. Two of the participants talked about their experience having their children with them and about what their children had learned. None of these demographic differences led to discrepant findings.

Because the announcement of the study went out by email, there may be a bias in this study toward the 2019 participants who like to read email newsletters from AxSol. AxSol had collected an email address from everyone who registered for the event. However, those who do not regularly use email or who had unsubscribed from AxSol's newsletters would not have received the research invitation. Furthermore, individuals would have to have an ongoing interest in AxSol that caused them to open the email and read far enough to see the research invitation. This means that the sample may be biased toward individuals who expressed the sentiment of Blair: "When I see their emails, I'm

like 'oh sweet,'" or Chen, who found the emails to be a vital part of ongoing connection with the community and wants more communication.

Table 1 provides a brief introduction to each participant, including some of their commonalities and differences. The column labeled Interview Emphasis highlights my understanding of the predominant focus of the participant that emerged in the interview. Avrey, Chen, Drew, and Echo all talked about plans to return, and three of them mentioned advanced purchase of admission to the next program. Echo plans to return as a volunteer in order to experience a full week of the community. Flynn and Blair both expressed a potential interest in teaching, though they did not mention having registered to attend the next event.

Table 1

Description of Research Participants

Alias	Miles from event	Motivation to attend	Interview emphasis	Background preparedness	Key classes/experiences
Avrey	< 30	Comfortably outside of comfort zone	Freedom	Music festivals, backpacking, camping	Hands-on projects, metalwork
Blair	> 500	Taught similar skills	Be yourself	Outdoor skills camps, crafting	Hands-on craft classes, leatherwork
Chen	100-300	Friend's invitation	Physical embodiment	Backpacking, camping	Reflection, conversation, hands-on skills
Drew	100-300	Connect with people and nature in a festival context	Spiritual connection	Arts festivals, community gatherings, spiritual practices	Spirit work, flute-making, sitting with the trees
Echo	< 30	Hands-on skills	Compassion, trust	Outdoor programs, camping	Hands-on classes and conversation
Flynn	> 500	Daughter interested	Listening, community	Camping, related program	Massage, teaching, and self-care

Note. All interviewees were first-time, adult participants representing a diverse mix of age and gender. No interviewees identified as Black, Indigenous, or persons of color.

Data Collection

In this section, I address the recruitment process, data collection procedures, variations in data collection, and unusual circumstances in data collection. Recruitment procedures led to 18 potential volunteers who met the participation criteria, of which six responded to the invitations to interview. Data collection took place using interviews over Zoom following a semistructured interview process organized around an interview guide. There were several variations in data collection procedures from the plan described in Chapter 3, most notably a reduction in the needed sample size because of early saturation. The final part of this section outlines the unusual circumstance in which all the interview data were collected within a 3-week period.

Recruitment

This study was approved by the Walden IRB. Two weeks later, AxSol included an announcement of the study in their monthly newsletter. The announcement included a link to the online screening form where I collected contact information and selection criteria from interested volunteers. I received eight form entries the first day. Three were from the same person, and another three did not meet the inclusion criteria. After waiting a few more days, I still did not have enough volunteers, so I asked one of the administrators at AxSol for help. The next week they drafted and sent a direct email to all the participants who had registered to attend the 2019 program. This email included a link to the screening form, and the number of interested and eligible volunteers doubled. AxSol also posted an announcement of the study on the Facebook event page.

A total of 18 potential volunteers completed the interest form. Three did not indicate having a student role, and one was under 18, making them ineligible. I developed and followed a ranking system to give preference to volunteers that would provide the highest quality of data to answer the research question. Because of the limited pool I had to draw from, I ended up working through all the ranked levels and sending all qualified volunteers an invitation to interview. None of the lower-ranked individuals responded to the invitation to interview. The six qualified volunteers who responded to the invitation to interview were all first-time adult participants in the 2019 program who held student roles and stayed for the entire duration of the program.

Data Collection Procedures

Although they were offered the alternative of a phone call or video platform of their choice, all participants opted to complete their interviews using Zoom. I conducted the semistructured, one-on-one interviews from a home office space and asked participants to find a quiet and private location free from distractions. There were no technological issues with connection or recording. I completed all the interviews over 3 weeks, starting 2 weeks after the first invitations went out. Because the practice interviews lasted only 60 minutes, I was surprised to find all the interviews lasting about 90 minutes. In fact, the volunteers were also surprised when I stopped them at 45 minutes for a check-in to make sure they were fine to continue. One of the interviews lasted 95 minutes with the consent of the volunteer. Several participants expressed appreciation for the chance to revisit their memories from 2019 and contribute to the program by sharing their experiences. Three asked to see the dissertation when it is published.

I mostly allowed participants to guide the flow of the conversation using probes to help them elaborate on unique unanticipated aspects of their experiences. Following this process, I was able to collect robust answers to all the questions on the interview guide with each participant. The final open-ended question gave participants the chance to add anything they wanted to about their experience. Everyone used the opportunity to add or confirm their ideas; two participants asked for the research question and responded to it. I completed six interviews of approximately 90 minutes, which provided more than the minimum amount of data I had forecasted I would need to answer the research question. As explained in the section on variations in data collection, I ended the data collection at six interviews because I had reached saturation (see Burkholder et al., 2016) and did not have additional volunteers to interview without reducing the homogeneity of the sample (see Guest et al., 2006).

During the interviews, I intentionally waited to introduce potentially key words or phrases until participants had mentioned them. I also avoided using key words in the sample questions that were shared with participants as part of the consent form. For example, I did not ask about participant experiences of the community until after they had mentioned the community was an important part of their learning process. I purposely ordered the interview questions to begin with more general open-ended questions, and I followed a semistructured approach that allowed participants to introduce important topics without prompting. I also did not assume that participants meant the same thing by words like magic, spiritual, or community and used probing questions to

ask what these terms meant to them. Then I asked for examples of where they saw these ideas come to life in their experience at AxSol.

With the permission of participants, I recorded the interviews with Zoom, which provided a free transcription service. I also ran a QuickTime recorder on my computer as a backup audio file, which I used to review and correct the automatic transcriptions I received from Zoom. In addition to the recordings, I took notes during the interview using an interview guide (see Appendix A). The guide included a column for my personal reflections during the conversation, a column for notes about participant vocal inflections and possible meanings, and a column for recording quotes or key ideas that stood out to me in real-time. I found that the notes were useful in finding areas I wanted to focus on in follow-up questions and for noting areas where my questions were unclear or where the context would be key for analysis.

I downloaded the automatic transcript from Zoom a few days after each interview. For the sake of confidentiality, the names of participants were replaced in the transcripts with a generic "Interview A, B, C, etc.," and all my comments were noted with language that was not gender specific. After I corrected the transcripts by comparing them to the audio recordings, I sent copies of the transcripts to the participants with the option for them to revise or adjust any of their responses. In the message, I said I would assume they were satisfied with their responses if I did not hear back within 5 days. One individual responded to say they were reading it, and another to say they approved. A third individual's email provided an automatic out-of-the-office response, so I waited

until 5 days after their anticipated return for any suggested changes. The other three did not respond in 5 days.

I did not remove any instances of *ah, um, like, you know*, etc. from the transcripts as the evidence of thinking was useful for my analysis (e.g., an instant and lucid response might indicate confidence and a pre-formed thought compared with a lot of "um, maybe, like, you know" stumbling). However, I did remove these and repeated words (see Corden & Sainsbury, 2006) – or used ellipses – when necessary for the sake of clarity in the quotes reported in the findings section. To honor the unique voice of each participant, nonstandard English usage has not been marked with [sic], deleted, or changed in participant quotes.

Variations in Data Collection

This section provides the rationale that informed a few variations in data collection from the research plan proposed in Chapter 3. The most significant variation was related to the sample size needed for saturation. A second variation was the addition of three probing questions to the interview guide in collaboration with my chair. The third variation was a higher level of homogeneity than anticipated, which was caused by the absence of response from volunteers who were not first-time participants. I also changed how I used the notes made in the interview guide and chose a new software when the original plan did not meet my needs for coding and analysis.

Sample Size Needed for Saturation

My initial projections were that I would need to collect at least 45 minutes of data from 8-12 volunteers (e.g., 10 people @ 45 minutes = 450 minutes) in order to reach

saturation in the process of answering the research question. I ended up collecting about 90 minutes of data from each of six volunteers, which is an equivalent or greater amount of content (6 people @ 90 minutes = 540 minutes). Nevertheless, Burkholder et al. (2016) claimed that it is more important to achieve saturation than to hit the target sample size. They defined saturation as the point at which new information simply reinforces currently existing themes, which are sufficient to answer the research question. Patton (2015) also recommended stopping the data collection process early if saturation has been reached. Mason's (2010) analysis of 560 dissertations, however, revealed a questionable tendency of beginning researchers to use an arbitrary sample size that was a multiple of 10 rather than demonstrating saturation to validate the number of participants ultimately chosen for their studies. Burkholder et al., Patton, Mason, and Guest et al. (2006) had all informed the original design of the study, so I was prepared to favor saturation over sample size as the indication that I had reached the end of data collection.

My experience of saturation in this study was similar to that of Guest et al. (2006), whose study of the relationship between saturation and sample size demonstrated that a sample size of six (out of 33 interviews they conducted) was sufficient to support the four themes that answered their research question. Guest et al. (2006) did not indicate the length of the interviews, so their observations were made through a process of coding. They found that 92% of their codes emerged from the first six interviews, and these were not greatly changed by the addition of more data. I documented the coding process with similar outcomes, which confirmed my initial impressions of saturation with a smaller sample size than expected.

The length of the interviews, the quality of responses provided by screened and purposely selected participants, the narrow focus of the study (guided by a strong conceptual framework), a high level of homogeneity in the sample (see Guest et al., 2006), my experience with interviewing, and tightly honed interview questions (tested in two practice interviews) all contributed to a high quality of data that began to suggest saturation by the third interview. I confirmed my initial impressions with a fourth interview but had already scheduled two more interviews with volunteers who represented slight variations in my selection criteria by holding volunteer and teaching roles instead of just the student role. Their responses added to the range of experiences this study represents without demonstrating any departure from the emerging themes.

I chose to follow the suggestion of Burkholder et al. (2016) and Mason (2010) to let saturation (e.g., Glaser & Strauss, 1967) guide the ultimate sample size of this study rather than my predictions of sample size. Because I reached saturation within six interviews (and later confirmed this in the coding process), it did not seem ethical or necessary to continue contacting interested volunteers who had not responded to the emailed invitations to interview. Instead, I discussed with my chair the potential that I had reached saturation, had collected the equivalency of the maximum amount of data I had planned for, and had received agreement from all the participants to have follow-up interviews if I needed to clarify or elaborate on any emerging themes.

In addition to the reasons provided above for modifying the final sample size, I noted that it was unlikely I could acquire additional volunteers without reducing the homogeneity of the sample (a key part of reaching useful conclusions from a small study

– Guest et al., 2006). Everyone who responded to the interview invitations had attended the program for the first time in 2019; most of the remaining volunteers had attended in previous years. The second practice interview and the sixth interview both suggested that the experience of returning participants may be different from the experience of first-time participants. (My sixth interviewee, Flynn, had participated in similar programs.) I had already recognized this difference part-way through the interview process and begun to discuss with my chair whether it would be better to recognize the limited scope of this study (first-time participant perspectives) or to reduce the homogeneity and increase the scope of this study by seeking to interview the remaining unresponsive volunteers who had been returning participants. We decided to recognize that the scope of the study was limited by the circumstances of data collection to represent only the experiences of first-time adult participants. In addition to the argument from saturation presented above, it made pragmatic sense to ask my committee for permission to adjust the minimum sample size of this study from eight to six volunteers, given that I collected up to twice as much data (90 minutes vs. 45 minutes) from each participant as initially expected.

Additional Probing Questions for Interview Guide

With guidance from my chair, I added two follow-up questions to the interview guide to account for the additional roles held by the fifth and sixth volunteers: "tell me about your experience as a volunteer" or "tell me about your experience as a teacher." I also included probing questions at key points in the interview guide where I wanted to be sure I had distinguished the influence of the volunteer/teaching communities from the student community experience. These were not changes made to the primary questions,

but rather notes and examples of probing questions that I could employ when they were needed throughout the interview. I also worked with my chair to add an additional probing question about the community: "What are the values of the community?" Shared values had emerged as a significant and unexpected area of focus in the first two interviews, so I added the probing question to make sure I asked the remaining participants about the values they saw shared by the community.

Volunteer Homogeneity

I had initially expected to have a mix of volunteers who had attended for the first time and who were returning participants in the program. However, the only people who responded to the emailed invitations to interview were people who attended for the first time in 2019. They all commented on the differences between their experiences as newcomers relative to those who appeared to be returning participants. One of my two practice interviews was with a returning participant who indicated that I may hear a different perspective from people who had attended previously, which is why I asked about this in the screening form. I invited both first-time and returning participants to interview, but only first-time participants scheduled interviews, which meant I was not able to access the perspective of returning participants for this study. Therefore, the scope of the study was limited to represent the experiences of first-time participants in AxSol. I think this narrower scope provided a more interesting alignment with the conceptual framework of situated learning (Lave & Wenger, 1991), but the perspectives of returning participants will be a valuable focus for future research.

Other Minor Variations

There were two other minor changes from the initial design plan. The first was a realization that I did not need to create a combined transcript of the interview guide and the transcript. I still used the notes I had made in the interview guide to identify important areas of emphasis and to understand my evolving thought process. However, I only directly coded the transcript. Second, instead of using Microsoft Word and Airtable (https://www.airtable.com) software for coding and data analysis, I ended up making a shift to MaxQDA (https://www.maxqda.com). My reasons for this shift are outlined in greater detail in the data analysis section.

Unusual Circumstances in Data Collection

I had hoped to complete the transcript review and initial coding of one interview before conducting the next. However, all but the first interview were conducted within a period of 8 days. When I invited my first priority volunteers to interview (those who best fit the selection criteria for highest quality data), the only two who responded scheduled for 1 and 2 weeks out. Then when I received more volunteers from the second email invitation, the volunteers scheduled for 1 week out. One of them missed the interview, and then three more people responded to the follow-up emails and all scheduled or rescheduled for that week, resulting in four of the interviews occurring within a 4-day interval. Although it felt like a flood of data (as each transcript ended up being over 50 pages), I had set aside capacity and was able to review my detailed notes from the preceding interviews before moving on to the next ones, which allowed me to revise and improve my interview strategy. I was also able to check in with my chair about my

discovery of important themes and discuss the observation that I was interviewing only first-time program participants.

Data Analysis

In this section on data analysis, I describe the coding process, emergent codes categories and themes, and discrepant cases. The coding process includes an explanation of how I used qualitative data analysis software and a detailed look at the first, second, and third rounds of coding and their results. The next part of this section presents the emergent codes categories and themes through a description of my analysis and writing process. Then I close the data analysis section with a brief look at discrepant cases.

Coding Process

The first round of open coding began in a Microsoft Word document while I was preparing the transcript for transfer into Airtable for data manipulation as I had planned in Chapter 3. I received automatic transcripts from Zoom that included timestamps and numbers for each snippet of text. I needed to remove these to transfer the data into Airtable for analysis. Removing this information required me to go line-by-line (sometimes 2–3-line sections) through the data. As I went through the text, I highlighted key words, phrases, definitions, and potential quotes that responded clearly to the interview questions. I also commented on areas that stood out to me, were unclear, or seemed to indicate potential codes. Comments also noted whether another interview had included similar language.

After coding the first interview in Microsoft Word, I wanted to visualize the relationships between codes. I had planned on using Airtable for this as it was a free

software to easily create and manipulate code relationships. However, I was unable to view the codes in the broader context of the transcript. This felt like an issue of trustworthiness because my background in rhetoric has taught me it is easy to draw inaccurate conclusions from language that is taken out of context. Furthermore, I struggled with Word (version 16.51) and Airtable (version 1.4.5) as neither allowed me to apply codes of different lengths to the same portions of text.

Searching for an alternative, I gave a trial run to NVivo (https://www.qsrinternational.com), Dedoose (https://www.dedoose.com), and Quirkos (https://www.quirkos.com). I selected MaxQDA (https://www.maxqda.com) for coding and data analysis because it allowed me to easily visualize and manipulate relationships between coded segments while also permitting easy access to view these segments in the context of the whole transcript. MaxQDA also allowed me to clean the transcripts while coding and highlighting words, phrases, or ideas that stood out. I used the memo feature to note potential discrepancies, relationships between codes, and connections from one interview to another.

I coded in MaxQDA, beginning with the last interview so that I could compare the resulting code list with the original code system that I had developed for the first interview in Microsoft Word. Most of the codes emerged in the first two transcripts I analyzed, and these matched the original code systems I had developed while testing Word and NVivo. I added two additional codes while reviewing the fourth transcript and none after that in the first round of coding. The first round ended with 721 coded segments distributed evenly among the six transcripts (min: 114, max: 132). Of the 60

unique codes I used to identify the coded segments, nine had less than 10 instances and were easily deleted or merged into more relevant codes (Saldaña, 2016).

The second round of coding centered around searching for a list of keywords that I had noticed consistently (and recorded) in the first round of coding but had not made into codes. Three of these (*fire*, *ceremony/ritual*, *openness/acceptance*) became new codes because of their consistent use and significance in the transcripts. I also used the linguistic search feature in MaxQDA to search for all sentences containing the words self (75 instances) or community (51 instances), which helped reinforce the emerging story that the key takeaways from the experience were related to self and community.

The search process also helped me organize the codes into hierarchical relationships (categories) that I tested by analyzing code intersections and proximity within the text. At the end of the second round of coding, I had identified five codes that included the greatest number of instances. These became organizing categories. I have provided the number of instances for each: *legitimate peripheral participation* (22), *role of the gathering* (24), *community connection opportunities* (28), *community of practice* (35), and *culture* (38). These numbers do not count the number of instances included in the subcodes for each of these categories. Nor do they reflect the emphasis on nature that was distributed among multiple codes. The second round of coding and organizing codes resulted in 52 distinct codes and 942 coded instances distributed among the six transcripts (min: 141, max: 186 coded instances).

The third round of coding involved reviewing each transcript with the original audio recording to correct a few of the errors or unclear sections that remained. By saving

the transcript correction for the third round of coding, I was able to check my first

impressions (first-round) and logical/lexical analysis (second-round) with the vocal

emphasis of the participants while also forcing myself to pay attention to every word

despite my familiarity with the data. I also reviewed the notes I had made during the

interview to see if there were any areas of emphasis that I had missed in the first two

rounds of coding. The categories began to solidify into hierarchical relationships during

this third round of coding as I began to observe where the codes overlapped.

In addition to extensive analysis of codes, categories, and thematic relationships

within the text, I followed a writing process of distillation, which allowed the analysis

phase to continue until it fully reflected the breadth as well as the intensity and richness

of each theme. Instead of arbitrarily picking and choosing which quotes I would use to

represent the themes, my process of distillation began with a review of all uniquely coded

data instances from which I brought in all the transcript text that might contribute to

understanding each theme. As I wrote through each theme, I continued to organize the

data into relationships that more accurately represented the connections made by the

participants rather than depending on my analysis. This led to new relationships between

themes and subthemes and also showed that a supposed fifth theme was really an integral

component of the other four and could not be presented separately. I then developed these

subthemes with as much breadth as possible and finished the process by reducing the text

to only what was necessary to represent the depth and breadth of participant perspectives

on the phenomenon of socioecological learning opportunities.

Emergent Codes, Categories, and Themes

The categories and themes that emerged through the analysis process began as codes. For example, *community of practice* and *culture (values) – tone of community* first came to life as codes. Then it became apparent that several other codes supported these or tended to overlap. MaxQDA made it easy to notice that much of the text I had coded for *identity/way of life (purist)* was also coded for *community of practice*. This indicated that I had found a category (and eventually that I had found a theme). I experimented with collecting related codes into a variety of different groupings and eventually settled on a hierarchy of relationships between the codes. As might be expected, the codes with the largest number of instances (and the greatest percentage of text) gradually emerged as the organizing themes presented to answer the research question. These key codes are emphasized in Figure 2 in the form of a "word cloud," a visualization feature of MaxQDA that shows the most frequently used codes in larger font. A complete list of codes, categories, and themes can be seen in Appendix B.

Figure 1

MaxQDA Code Cloud

I used the MaxQDA analysis features to explore intersections between codes and found the two strongest intersections between *community of practice* and *culture* and between *community connection opportunities* and *ceremony/ritual.* Interestingly, *ceremony/ritual* had a strong connection with *fire*. While all three codes were initially developed independently, my analysis showed an important relationship: *fire* was an important aspect of *ceremony/ritual*, which was a significant part of bringing people together (*community connection opportunities*). In reporting the results, I placed community connection opportunities as part of the theme *community of practice* because the *fire, ceremony/ritual,* and *role of the classes* were all *community connection opportunities* that allowed newcomers to access the *community of practice*. At the same time, some participants commented on *ceremony/ritual* being an important part of what they learned or something they observed their teachers practicing. MaxQDA allowed me to organize the codes into various hierarchical relationships, so I was able to explore which themes worked best to capture and present the overall story of the data without sacrificing the ability to include the same code under multiple categories or themes.

Several of the data instances are attached to multiple codes and sometimes to the containing categories at the same time. For example, Avrey responded to an interview question about key ideas that impressed them, saying,

> There was … an attempt to create one from many, and this might be the
> drumming around the fire circle at night … but I want to say there was a desire
> from the participants to come together in more of a mental connection a spiritual
> connection than just you know let's come, and we'll do the classes, and we'll do

the thing, but there was an element of more *creating* community. And … one of

the takeaways is I could return to that and be comfortable.

Avrey continued by describing the importance of the fire ceremony in grounding the

learning experience as a whole. I coded that excerpt with the following: *fire as*

connection, ceremony/ritual, community connection opportunities, magic/spiritual, and

safety/trust. I did not code it under *culture* or *community of practice*, but those two codes

eventually became the themes that contained them. Because of how I arranged the codes,

this excerpt showed up when I asked the MaxQDA software to display all the text that

applied to the theme *community of practice* and the categories and codes it contained.

I also explored code proximity using MaxQDA and discovered that the code

community of practice and the code *culture* (both of which became categories and

eventually themes) appeared in the same paragraph 21 times in the six interviews. *Skills*

(hard) and *comfort zone/zone of proximal development (ZPD)* appeared together 19

times. *Skills (hard)* also appeared 17 times with *takeaways.* Then *takeaways* and *comfort*

zone/(ZPD) appeared together 16 times within the same paragraph. *Comfort zone/ZPD*

also appeared 14 times in the same paragraph with *embodiment, be yourself,* and *learning*

from context, indicating that it played a role in multiple parts of the experience. I ended

up reporting the instances coded with *comfort zone/ZPD* under the theme of *self,* and the

subtheme of *personal growth outcomes*, because many of the examples participants gave

were directly connected to their background and the opportunity for self-discovery

provided by encountering something different. Chen described *comfort zone/ZPD* this

way:

There's been times where I've sort of felt like an outsider and totally uncomfortable in that environment because I didn't feel accepted, but I didn't feel that there … and [I learned] to always stay curious about your own experience in the world and your own intentions and behaviors and allow yourself enough room to question that and change if you want to. It did make me question myself in healthy ways.

In addition to my analysis with the tools provided by the MaxQDA software, I also talked with other people about the story of the data in an attempt to see what salient points emerged in the conversation. The primary themes emerged in a confidential conversation with a friend about how my research was suggesting nature played a role in helping a community of people create a culture of safety and acceptance. This sense of openness and welcome enabled participants to engage with the community and with self-transformation. When I brought these ideas back to the data, I recognized that *culture* was more than just a subtheme of the *community of practice* and that *connection with nature* was deeply integrated into *culture*, *community of practice*, and the *role of the program*, eventually leading (as the literature had hinted) to a deeper understanding of the *self* as part of nature and community. This overarching storyline will become evident in the summary of the findings.

Discrepant Cases

Although most of the sample was homogenous with respect to the selection criteria, two individuals held additional roles to that of a student during their time in the program. For these two, I asked clarifying questions about what influence these roles

might have had on their responses. Due to the way scheduling worked, their interviews came last out of the six and provided a unique insight on the validity of my selection process and on the distinction between the experiences of individuals who took part in the communities of practice related to work trade and teaching (in addition to being part of the student community).

Every participant used other experiences, to some extent, to help explain their experience of socioecological learning opportunities. However, Flynn (the sixth volunteer) had been part of a related program to AxSol and confessed that their memory of the two had become entangled. I was, therefore, careful to note and ask follow-up questions about whether particular experiences applied to AxSol or to the other program. An example of where I needed to differentiate this in the analysis came from an extended dialogue with Flynn about cultural problems arising from teacher compensation issues. The underlying need for transparency remains the same no matter which organization they referred to, but they reported that AxSol had developed effective infrastructure to resolve the issue. In my analysis, I noted this as a potentially significant issue and emphasized that it was not a problem for AxSol, but an important contrast between the two programs Flynn had described. I also left comments and memos in the MaxQDA software to note where the coded description applied to the other program and not to AxSol.

Evidence of Trustworthiness

According to Ravitch and Carl (2016), qualitative research emphasizes the dutiful representation of the experience and perspective of the research subject. However, Rubin

and Rubin (2012) recognized a balance between saying what the participant sees and saying what the researcher sees. Because I think this balance is important for developing a trustworthy study, I tried to maintain a reasonable and transparent interplay between myself, the methodology, and the research participants in this study. The trustworthiness of a qualitative research study can be examined in terms of its credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). This section presents the steps that I took as a novice researcher in each of these areas to enhance the trustworthiness of the findings.

Credibility

My attention to the credibility of this study began with a careful design that helped to ensure that the data collected could answer the research question (Burkholder et al., 2016). The study's internal validity was based on a clearly laid out design, a thorough vetting of alignment, and the use of extensive reflexivity and detailed record-keeping to make sure that the findings of the study represented the perceptions gathered from participants (Anney, 2014). The credibility of the data collection method came from the development of interview questions in direct connection to the framework and other studies exploring similar phenomena. The interview questions were also revised multiple times in response to feedback from a dissertation committee member familiar with the study, peer review from other graduate students, expert review by AxSol program staff, and field testing through practice interviews with two friends who had been part of the 2019 program in student and staff roles. The interview guide focused on open-ended questions, which were arranged from general to specific, and I tried to avoid asking

follow-up questions about specific concepts like relationship with nature or community until after participants had a chance to frame their experiences in their own words. Three of the study participants mentioned preparation for the interviews, including time spent in reflection, gathering artifacts from their experience, or writing down answers and ideas based on the sample questions I had included in the consent form. I also used transcript checking, which gave participants the opportunity to clarify or revise any of the ideas they had shared during the interview.

Transferability

As indicated in Chapter 3, the transferability of this study is limited because of its focus on a unique, innovative educational program. The transferability of findings depends on a thorough description of their context that others can use to relate to their own setting (Patton, 2015). According to Burkholder et al. (2016), thick description includes details of the setting, participants, and the evidence to support findings. Although the description of the context was somewhat limited by the need to maintain program and participant confidentiality, I included as much detail as possible describing the program, location, and participants, along with a thorough explanation of the research design and implementation. This information should allow future researchers to determine the similarities between AxSol and other settings or phenomena of interest.

Dependability

Dependability requires consistency and clarity surrounding the research design, sampling, data collection, analysis, and reporting process (Burkholder et al., 2016). The details of this study design have been thoroughly outlined to enhance its potential for

replication in other contexts. I included a detailed description of the research design and data collection/analysis process. The interview guide (see Appendix A) opened and closed with reflexive exercises to keep track of my status as a researcher and included a section to record my reactions, reflections, and interpretations as the interview proceeded. Throughout the data collection and analysis process, I kept careful records related to coding, categorization, and eventually theme development. In the coding process, I noted when participants offered general opinions or speculation rather than simply sharing their experiences and found that four of them demonstrated high levels of self-awareness about this distinction. I also kept a memo of my evolving understanding of the phenomenon and choices or decisions I made in the analysis process. I shared this with my dissertation committee for feedback and guidance.

Another aspect of dependability emerged in the coding process. When I began to code the first interview, I realized that my own experience of the phenomenon was coming into conversation with the participant's perspective. I stopped and waited until after the second interview to resume coding and was able to put the participants' perspectives into conversation with each other instead of with my own experience.

Confirmability

This study was designed with a deep level of reflexivity and responsiveness that helped ensure findings came from the data rather than just the opinions of the researcher (Patton, 2015). In addition to a commitment to sharing the perceptions of participants in their own words, I also diligently recorded my own evolving thoughts and perceptions throughout the data collection and analysis process, adding to the memo that already

contained records of my progress through problem identification, literature review, and proposal development. This audit trail provided transparency about my process as the primary data collection instrument and helped to disentangle the inevitable overlap between the etic and emic perspectives. For this reason, it should be possible for a different researcher to reach the same conclusions following a similar research design.

Results

The research question addressed by this study was one of how first-time adult participants described their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program. In this section, I present the findings of this study using four themes drawn from my analysis of interviews with six purposefully selected participants. Participants described their experiences of socioecological learning opportunities by talking about the program, the culture, the community of practice, and the self. To give the reader more contextual understanding of the setting where the program took place, I have presented findings related to the program first.

The four themes and their related subthemes that emerged from participants' descriptions of their experiences of socioecological learning opportunities are:

- Theme 1: The role of the program
  - short-term program
  - immersive program
  - community-based program
  - environmental education program

- Theme 2: Culture – tone of the experience

  o magic/spiritual – how the culture felt

  o openness/acceptance – how the culture affected learning

  o way of communication – origin and spread of culture

- Theme 3: Community of practice

  o the people

  o the role of the teachers – embodied knowledge gateways

  o community connection

  o shared practices

- Theme 4: Self-identity – individualized learning, personal growth outcomes

  o individualized learning – levels of participation

  o personal growth outcomes – embodiment, empowerment, personal agency.

The themes participants used to describe their experiences of socioecological learning opportunities also appear in Appendix B, which provides a table of themes, categories, and codes that emerged in the data analysis process.

 Quotes from participants have been edited for clarity. Filler words have been removed, except where they functioned as an indicator of metaphor, obscurity, or uncertainty (see Corden & Sainsbury, 2006). Nonstandard English language was not corrected or marked unless it prohibited understanding. For the sake of confidentiality, language specific to the program has been substituted, and all potentially identifying details about participants, locations, or people have been removed or changed in a way that has minimal impact on the overall meaning or significance of the data. All italicized

words represent vocal inflections that I noted during the third round of coding. Any

discrepant or nonconforming findings have been discussed within the relevant theme.

Theme 1: The Role of the Program

The role of the program refers to those aspects of the organization that

participants encountered, which influenced their experience of socioecological learning

opportunities. Operational structures (or administrative activities that support the

programmatic structures) may appear briefly in the description of the theme but were not

the focus of this study. Participants described their experiences of the role of the program

in their experience of socioecological learning opportunities using four subthemes: (a)

short-term, (b) immersive, (c) community-based, and (d) environmental education

program. The parallel between these subthemes and the research question does not come

from predetermined coding used in analysis. These subthemes emerged in the writing

process as a useful way to organize the naturally emerging findings from the codes and

categories related to the role of the program.

Short-Term Program

The first subtheme of the role of the program reflects the time-space that AxSol

created for the socioecological learning opportunities. All interviewed participants stayed

for the whole program: 3 nights and 4 days. The 1st and 4th day were only partial days,

which explains why participants referred to the significant role that "3 days" had on their

experience of community and ability to drop in or acclimate to the immersive setting. I

will also refer to the experience as a 3-day program. According to Flynn, the 3 days of

immersion provided such a "whole-body transition" that it was difficult to transition back

to real life afterward. Some participants, like Echo, enjoyed the experience so much that they stayed an extra day to volunteer.

Avrey described the multi-day structure as an opportunity to "disconnect and slow down." "It's like a breath of fresh air from the other rhythms in my life," said Blair. This allowed a very laid-back schedule, which Echo deeply appreciated, saying that parenting duties always made them "late getting to whatever class I was supposed to be in, but it didn't matter. I mean they if they had the materials and they weren't overwhelmed by how many students they already had, they would just say come on in." Blair noted the need for time to find "relaxation and spaciousness [for] connection to other people." They thought it was significant that everyone was fully present and not distracted by other parts of their life as they might be in a Tuesday-night event that lasted only an hour or two. At the same time, Chen recognized that 3 days was not quite sufficient to feel like you were a part of the community.

Immersive Program

This second subtheme describes participants' experience of immersion in nature as a critical part of the role of the program in providing socioecological learning opportunities. The 3-day program was held in a remote, private, outdoor event space, which so closely reflected the ethos of the program that Blair asked if it was owned by AxSol. The land had the sort of influence that Drew, who had been there previously, said they "had a connection to it and just wanted to go and be with that land … ". The space was large enough to host separate camping areas labeled loud camp, quiet camp, family

camp, and queer camp. Avrey thought these designated spaces were important for getting

enough sleep and also for connecting with people who had similar life patterns:

> You know, us, the quiet guys, we're all gonna bond about how nice and quiet it is
>
> over here and how you can hear the birds chirping - and the family people are all
>
> going to bond about the family, so that segregation actually, kind of, in a way,
>
> created communities.

The spaciousness of the event also permitted a secluded red tent to support menstruating

women, a sacred ceremonial space for the sweat lodge, and two ponds for swimming –

one clothing optional, which several participants described as playing a significant role in

their learning experience.

The grounds were the cleanest Avrey had ever witnessed in a festival context.

They reflected that this may have been due to clear communication about a pack-it-in,

pack-it-out mentality supported by no trashcans being available for garbage. There was

no cell phone service, which contributed to a secluded feeling and opportunity to escape

technology, said Chen, who said they did not see anyone use a cellphone even for taking

photos. According to Avrey, "The super beautiful area disconnected from cell phones and

everything. You know, campin', eatin' your own food; you can't help but feel more

connected to the rhythms of the natural world." Because the lodging and classes were all

in tents, Flynn emphasized that weather patterns could significantly impact the emotional

experience of participants. The week of the 2019 program offered warm days, clear skies,

and cool nights. Chen said,

There is something about that third day, like that third day without technology,

that third day in nature. Like just that third day, and it makes you want more days.

Right, and I will also say that the days were gorgeous, and it was in June.

Community-Based Program

The third subtheme of the role of the program describes how socioecological

learning opportunities were rooted in community. The community "definitely seemed

very localized and connected to place," said Blair, who traveled the furthest distance of

all the participants I interviewed for my study. They continued, "people were there

promoting the sustainable beef on their farm and inviting you to come to visit their farm.

I gathered all these contacts, which was cool." When I followed up with a question about

value for someone from so far away, Blair reported feeling no barriers to participation in

the program, only sadness at being unable to follow up with new connections. Avrey,

who lived in the local community, reported that the racial demographic of the participants

was predominantly White and did not represent the diversity of the nearby population.

However, there were several teachers and facilitators from local Native-American

communities.

In addition to location-based community, the participants described several other

ways of understanding community. The findings revealed a counter-culture-based

community of people who would spend much of their time traveling and teaching for

AxSol and related programs. A further meaning of community-based comes from what

Drew called the "open-source, buffet model" of learning in which the program simply

provides a space for teachers and learners to contribute together in building a community-

based exchange of knowledge and skills. For this reason, Avrey said, "attracting the right people and setting expectations" were an important part of facilitating "a great program." When I asked Chen if they could have enjoyed a similar experience in nature without the community, they replied:

> I don't know that I would describe my experience with nature, specifically, without the community and the folks any different than any average experience [of camping] … There were parts of [the setting] that felt real magical, but it was a big combination of nature, community, people, connection, like mindsets of folks around me, and just sort of experiencing the energy of all of it. I don't know if you take away any one component if it would have been transformative in the same way.

Environmental Education Program

The fourth subtheme of the role of the program in providing socioecological learning opportunities was its function as an environmental education program. None of the participants described AxSol as an environmental education program even though they reported experiencing the topics, goals, and outcomes defined in the literature review on environmental education that guided this study. Avrey and Drew both referred to the program as a "festival," though Avrey clarified that this was how it felt, not necessarily what it was. Drew explained that it had a similar culture to Burning Man-inspired festivals with a focus on "teaching people these values of like, how do you sustain in the world in a self-sufficient way but also being mindful and respectful and non-judgmental." Both agreed that if it was a festival, it was more of a toned-down or

relaxed version "maybe with a little bit less of the indulgent part of that lifestyle" or a festival "with a purpose." Blair said that AxSol had been framed as a place to learn skills but aligned with Chen in describing the program with reference to religious communities they had been part of, which came together around shared values. I probed for further details of the shared values from all the participants and have described them under the theme of culture. Participant descriptions of shared values (explored in the themes of *culture* and *community of practice*) do little to disqualify AxSol from being described as an environmental education program but suggest it provides a unique kind of learning experience.

Theme 2: Culture—Tone of the Experience

Culture, the second theme, was the predominant focus of the participants that I interviewed in terms of how consistently they described it and how frequently they mentioned it as a factor in their experience of socioecological learning opportunities. It was also one of the first themes to appear in the interview process, which surprised me because it was not part of my interview questions and had not surfaced in my literature review. The theme of culture includes three subthemes: magic/spiritual, openness/acceptance, and way of communication. Participants referred to magic or spirituality to capture the feeling of being present in the learning context. They also used culture to describe their experience of openness and acceptance from the community, which laid the foundation of safety and trust for them to explore and try new things. In response to my direct questioning about the origins and spread of the culture, participants described the way of communication and the values shared by the long-time participants.

In addition to the subthemes outlined here, the words kindness, compassion, sharing, self-reliance, and creativity appeared regularly in descriptions of the people and their interactions.

According to Flynn, the experience of the culture provided by the entire context was so immersive that

You're like in another time zone. You are in another place, and the learning goes so far beyond the nuts and bolts of just learning the skill, or the craft, or whatever. It's a whole-body transition … When you're there, and you've left behind your whole home life, and you're just here … . For the closing, they talk about how hard it is to transition back, and it is super hard! The first time I went … I was shocked at how hard it was for me to transition back [home] … . And I think that [immersion] contributes to the whole like you're fully prepared from head to toe to absorb. You know, to take your learning to a new level, whether it be like on race relations or like being exposed to different sexual orientations, or just communicating skills in general, like those are hard things.

When I asked about what it took to drop into that full-body experience, ready and open to learn, Flynn replied without hesitation: "it's the culture, it's the whole culture … ."

Several participants noted that the culture did not come from an explicitly stated set of values but from the practices demonstrated by the community. For example, Chen said,

The connection to some sort of unstated values or perspective on life was definitely a theme throughout. It's almost like you could see this unwritten "in

this place, we are comfortable in our body, and we respect each other; we're

going to communicate in that way; in this place, we are no judgment." And it

wasn't listed anywhere; you just knew it was true.

Magic/Spiritual—How the Culture Felt

The first subtheme of culture as part of the participant experience of

socioecological learning opportunities emerged in the first interview when Avrey used

the word magic to describe the "state of being" they experienced in the program. Then

Blair used the term "holiness" in my second interview to describe the sacred space

created for connection and compared this to people's love of festivals like Burning Man.

Chen helped weave the two concepts of magic and spirituality together in my third

interview, and the remaining data reinforced the participants' experience of the culture in

ways that could only be described as magic or spiritual. Participants applied this feeling

of magic to their relationship with the ceremonial aspects of the program, their

connection with other participants, and their encounters with the land.

The opening ceremony was a pivotal moment in setting this tone of the learning

experience, and participants shared elaborate stories about the ceremonial lighting of the

first fire and how the newly kindled flame was passed around to all the participants

before landing in the center pile of wood and burning throughout the duration of the

program. Chen explained,

> The reason that I would describe the process of setting the fire as spiritual or
>
> magical, [pause] I think it was really neat to see a group of people participate in a
>
> ritual that you know that they've done before and that be connecting to some sort

of meaning, and that meaning be like positive or calming or happy, you know. That makes it spiritual. I mean, there's something about rituals as a human that has that aspect … that's spiritual and bigger than me … and I feel the same way about nature. But it's always things that involve, like well, connection is probably a good word. I mean, you're either connected to nature, connected to a community, connected to another person, or connected to this ritual that brings a pleasant feeling.

Like Chen and others, Avrey emphasized the opening ceremony of starting the fire. However, they added detail about the ceremonial practice that connected current participants with the community of those who had gathered before:

The fire carriers, or the guys who were tasked with (it wasn't just lighting the fires, it was keeping the fire alive - so the fire in this sense that they were doing there it is a living thing, not necessarily being, but it's a living thing) and specifically, one guy, who was clearly like an elder fire carrier, he had a little tin of ashes or bits of wood from all the old fires … and he would take little bits of that (and it wasn't on fire). He wouldn't use it to start the fire, but it would go into the fire at the beginning, and then this one communal fire was kept going the whole weekend. And then, at the end, some of those ashes went back into his little tin for the next thing.

"The magic I'm talking about," said Avrey, "is more just a state of mind that develops from the constant immersion in the area, the people, and kind of the intent too." They elaborated on the beautiful weather, the lush valley, and opportunities for listening

to the birds that were provided by the location of the program. Avrey also applied the feeling of magic to the community, using the word "spiritual" to describe the connection to other participants.

> Drew, who self-identified as a spiritual person from an early age, also described the experience of magic in terms of people and nature when I asked about moments they enjoyed.

> I camped right by the storytelling tent. So, what was cool is that anytime I was spending time at my tent, I was sort of in the ether of storytelling that was happening at this tent beside me. I sort of would catch that in the air. Yeah, so that was pretty magical … .And then I guess, certainly, I had magical moments in nature, where I was just sitting with plants and paying attention to the environment. I mean, those were definitely magical moments.

> The spirituality participants referred to was not connected to any particular religious tradition. However, Blair and Chen referred to similar experiences in Judaism, Quakerism, and Unitarian Universalism when trying to describe how the culture felt familiar. Flynn described a sort of collective spirituality that emerged through sharing stories around the fire.

> Fires after hours that are for talking, not for music … you'll get so much more: people sharing stories - all the people, not just the instructors. But the instructors are facilitating it … It's almost just like another class. They're setting everyone up and then allowing people to contribute. And when one person builds on another

person's story and another person's story and another person's story, you get a

collective spirituality, you get a collective experience …

When Flynn talked about public prayer, they described it as occurring without respect to

dogma "associated with traditional religions … It's just a really beautiful way to feel

connected to one another, and you feel like you're with people who give a shit, you

know."

Avrey had suggested that leaving part-way through the event would somehow

break the magic or spirit of the event, but it only seemed to amplify Echo's ability to

notice how special it was. Echo shared a story of leaving for an hour in the middle of the

program, saying that it felt disheartening to leave a place where

Eye contact is there, and people will actually stop what they're doing to

communicate with you. And that's not really the experience you get in our

everyday life, you know. So, I noticed all that and then coming back, it was very.

It was just an embrace, which I looked forward to. And that's one reason why I

stayed for [an extra day] to volunteer to take things down: because I wanted to

carry on with all that.

Openness/Acceptance—How Culture Affected Learning

Openness/acceptance is the second subtheme of culture as a significant aspect of

socioecological learning opportunities. This subtheme demonstrates how participants

noticed the culture affecting their experience of socioecological learning opportunities.

Participants described an experience of openness and acceptance that made them feel

physically and relationally safe, welcome, and ready to learn. More than just a lack of

judgment, the culture of openness seemed to be an active invitation for the myriad of human expressions and explorations. According to Flynn, this kind of openness is the most important part of the experience: "It's like learning how to learn, you know learning how to open your mind open, your heart."

Most of the participants observed that nobody was an outsider and suggested this may have been partly due to a self-selection bias that drew people with similar values to the program. Avrey associated the potential for feeling out of place with the tie-dye apparel they brought and were surprised to find few others wearing. However, they said,

> The one thing that I didn't pick up on is long-timers - people with lots of experience … The community members didn't flaunt that to anybody else. There wasn't any kind of rank or any way to tell who was new or who was you know experienced or anything like that, so nobody was looking down at your nose, because you were you know dressed funny and wearing, um, you know, Nike's instead of beaten-up sandals.

Chen had a similar comment about using a Nalgene bottle when most people drank from Mason jars. Chen mentioned having experienced feeling out of place in other contexts, but not at AxSol. In fact, Chen felt that in this context, differences in lifestyle and perspectives were welcome.

> I did see people who were dressed in a little bit more mainstream clothing, yes. Was there more than one Nalgene? Yes. I didn't necessarily feel not included, but I also didn't notice anyone not being included. Does that make sense? Like, I felt like a little bit of an outsider once I got there, even though I felt very welcomed.

Chen's distinction between feeling welcome and accepted while still feeling like something of an outsider may be explained by two things. First, in contrast to the other participants, Chen identified as more of an observer than a participant, saying:

Did I feel welcomed? Absolutely! If I wanted to communicate with someone, I could. Did I choose to do that a lot? No … I don't even know how to say it: I knew that I was not part of this community, yet it seemed really interesting and intriguing, and I appreciate, you know, their values and I'm sure we have shared values, but this [experience] was definitely about me and me observing.

A second reason for Chen's contrast between feeling welcome but still an outsider can be found in the consensus among participants that the "insiders" were people who had known each other for a long time. Echo did not feel like an outsider until they decided to stay an extra day and found themselves in a group of volunteers who all knew each other. In contrast with the rest of the experience, that moment felt like "now I'm the odd guy out." But that feeling vanished quickly:

By the end of that day, it was hot. We'd worked a long time, and we still had more work to do, you know. It's like three or four in the afternoon, but we are walking down to that pond. We got down there and we're waiting for the truck to come back to load stuff up, and it was like, "well, let's jump in, let's take a swim." And everybody, the guys, the girls just, we all just took off all our clothes and jumped in the water, and it was like I was part of the group at that point, it didn't matter, you know. I mean like how much more vulnerable can you get

almost by taking off your clothes in front of like half strangers. And so, kind of that whole outsider feeling, it was pretty much long gone by then, I would say so.

The openness and acceptance, which caused participants to feel a sense of safety in their connection with other people, wasn't just one of body acceptance. For Chen, it was especially significant in terms of women's relationships with each other.

Women communicate freely and support each other and share ideas and that's not (again, this was one snapshot of a community in this is how I felt I'm sure there are issues there but) like other communities where there's a lot of women there's a lot of competitiveness, there's a lot of gossip, there's a lot of expectation about what you're supposed to do, and I didn't feel that there.

I asked about where that came from, and Chen responded, "You're not gonna get any of that without trust," and then drew from their career as a therapist to note that trust comes from a shared experience, from vulnerability in conversation. In most contexts, Chen said, people have to "wear armor or wear a mask" because "vulnerability can be mistaken as weakness." But this did not feel necessary in the context of AxSol because of how open and accepting it was.

You know, I imagine that as in any community, there are outliers or issues or judgment, but it felt like a real non-judgmental place … I would imagine that they're real open to different people, different perspectives, different lifestyles, you know, and would support anything that you might be doing that felt right for you.

Avrey had a similar experience:

We've talked about how welcoming the environment was, how easy it was to …

It wasn't threatening to drop your airs, or it wasn't threatening to be yourself. And

so, you know that that allowed me to be more open to. Listen to people, but more

in the nonverbal sense or be you know sense people.

Echo connected the sense of openness and acceptance to time spent in connection with

nature, saying,

But you go out into nature, and the longer you spend out there, the more all that

busyness doer-ship just falls away, and then, when you're quiet, you can then look

at your own self and understand yourself better. So that's why I say … first of all,

compassion for yourself and wisdom for yourself … then you can be more

compassionate to the other, and also then you can have more wisdom about the

other. So that's kind of where that [openness] comes from.

The sweat lodge ceremony was another experience participants mentioned as

helping them find openness toward themselves and their experience. Blair talked about

the sweat lodge and how it set the tone of openness and acceptance by honoring the

tradition and those who were present, which allowed them to open themselves. Avrey

talked about how the sweat lodge put them in "a state that allowed me to be more open"

and just see "you know, what's fate going to do to me," which was unusual for Avrey to

experience as a highly organized person. Flynn also identified the cultural way of

communication as contributing to this mindset.

Way of Communication—Origin and Spread of Culture

The way of communication that participants described as part of their experience of socioecological learning opportunities is the third subtheme of culture, and it demonstrates their perceptions of the origin and spread of the culture. When I asked Flynn how they could identify someone as "living the lifestyle" or as fully participating in the community, they responded instantly: "The way you communicate is absolutely essential!" Flynn described this further saying,

The way you communicate … seeing another person in that moment, as they are and recognizing their needs and truly empathizing them in a simple conversation. That is the difference. I feel like everything else falls into place when … you're really just sitting with a person and understanding their needs, and then they're feeling acknowledged, and so their problems kind of melt away for the moment.

Flynn noticed the way of communication flowing from the top doing, beginning with the people who are "doing this as a lifestyle … . The people on the very top [who] are creating or cultivating this culture of like checking in with each other, and I feel like [it] spreads around to everyone.

Echo had a similar notion about the importance of communication to the origin and spread of the culture.

All this like-mindedness and this openness like open your heart and patience and listening. Listening to the other - that's where it comes from, I think. The culture is just right for that kind of experience … like me, or you or somebody else that first time there, you can't help but to open up, I think, because everybody else has

just already opened to some extent. But that's how I feel. I mean, obviously, I
don't know how open anybody else is; it just feels that way.

Echo felt this from the moment they arrived and experienced issues with the
registration process: Their name was not on the list:

There was, and I forget the girl's name … I want to call her a director, but I don't
know what her official title was, but she was *in charge*, and she was right there
helping me deal with whatever … And they got it all worked out, but it took a
little while, and she was just so engaging and patient and understanding, and it
was just … really nice to have almost everybody that way.

When I asked about where this way of interacting came from, Echo replied, "It's the
culture of AxSol."

Drew, Avrey, and Flynn mentioned that the program organizers had
communicated some behavioral expectations (e.g., no alcohol or illegal substances) up
front. However, Chen emphasized that the culture seemed to flow from an "unspoken
rule book that was happening." I asked how Chen knew that they shared values with
people if they were not stated somewhere, and they replied,

You might get something like this spiritual answer again. But it's one of those
things that you feel energy in a room, or you feel energy coming from a person, or
you walk up to a setting with women and they're speaking truth about their life,
and you know it's genuine because you feel it or they're sharing private details
that you feel is genuine because of the content … I don't necessarily think that
there is any set demographic for these type of values like you're going to find it

replicated all over the world. I mean. I think the tone was set really early in the experience for you to have an expectation that when you're in a group of people that there's going to be trust. And I definitely felt that in every group. You just you felt like you can trust these people. They're not here to be manipulative or hurt me in any way, and that that was set early in the experience, so I think it was really easy to replicate that every time I met with folks.

For Chen, shared experiences and a context where it was safe to be vulnerable were both important aspects of trusting other people. For Echo, this shared experience came from the coursework and learning together:

It was simple to connect in those places because you all chose to be there; you all kind of have that common desire to learn something. Regardless of what the subject matter really was, you're all there for the same reason, so it's easy to sit down next to somebody and start chatting. You know, and like I say in the beginning, you kind of plow through the small talk, and then it's on to the good stuff.

Theme 3: Community of Practice

Community of practice was the most prominent theme used by participants to describe their experiences of socioecological learning opportunities. Although they did not use the term *community of practice*, participants described the people who were present in terms of the values and practices they came together to share. A simple interview transcript search showed that participants made 75 direct references to self and 51 direct references to community. However, this does not take into account the number

of references to people (212), connection (71), and togetherness (34) that are represented in the theme of community. Four subthemes present the findings related to the community of practice: the people, the role of the teachers, community connection opportunities, and shared practices.

The People

The first subtheme participants used to describe community of practice and its contribution to socioecological learning opportunities was the people. Avrey summarized the significance of this subtheme, saying, "The organizers had created this event, and they gathered … you know it really was the people that came that made it." When I asked what kind of people were drawn to the program, Avrey said,

> Down to earth in the literal. You know people who are interested in self-reliance, on being more in touch with the natural world. People who are interested in creating a community around that shared set of values and interests that coalesce around an event like [AxSol]. And generally speaking … kinder would be the closest thing. They weren't necessarily more, you know, outgoing or not … you know, I'm introverted; there's plenty of introverts there. And creative - you know, I saw a lot of creative stuff.

Chen corroborated this, adding

> Most certainly, everyone had a shared value of protecting the earth, recycling, and reusing; being kind to one another, and just respecting, you know, basic rights and things for other humans … and just the comfort that people had with their bodies and taking care of them.

As suggested under the theme of culture, the connection point for this community seemed related to "nature and the spiritual aspect of that," said Chen, rather than more "superficial" commonalities. There was a lot of room for diverse perspectives and ways of life, but several participants noticed that apart from a few indigenous teachers, almost everyone was White. Blair thought this was an area for improvement but also noted other aspects of diversity that were clearly visible: "I think it's really important that it's so intergenerational and there are kids running around everywhere. Like I think that's really important for the kids but also for people of all ages."

The community was smaller and more "tight-knit" than Blair had expected and concurred with Avrey that the "experienced" people seemed to know each other so well that the community almost felt exclusive or "cliquey," even though everyone was very welcoming. As Chen described, "you could tell that there were relationships that were much bigger than those 3 days." One of the things that drew the experienced people to the program was the possibility of sharing their values and ideas with others. Echo and Flynn both aligned with Avrey's suggestion that the participants and teachers who attended the program represented a subset of a larger community of practice who were "excited about those ideas and the community values and the possibility of sharing that and infecting more people with that."

Blair's perception of the ideal life presented by the community of practice included the notion of a communal "crunchy granola" cooperative homestead either outside of an urban area or in an urban area with more connection to the land.

[Maybe] still having full-time nonprofit or academic jobs but trying to grow as much food as we can and doing lots of primitive skills type stuff like there is at AxSol. So going to a program like that, and meeting and learning from and befriending a ton of people who are, in a sense, living that dream of like living more off the land and not being so on track to contribute to a 401k and have the official job titles all the time. Maybe not saying that people there aren't; maybe they are, but it's definitely the image of people kind of eschewing this more mainstream track of employment and living more in the mountains.

Flynn reported interacting with some of the teachers over an extended period of time and discovering that some of their initial perceptions were based more on persona than day-to-day reality. In fact, Flynn, who was one of the teachers for AxSol in 2019, spoke of working with their partner in their business, homeschooling their children, and occasionally finding time to practice the way of life they taught and modeled during the program. In contrast to Blair's perceptions, Flynn observed,

Most of the upper-level people are not living the way that they lead on that they live on a day-to-day basis. They're not. They're living in regular houses. They're just … I'm not saying they're masquerading or anything - but you would think going in, I was in awe! I was like, "Wow, people really are really doing this." You know, I was being a little naïve. I was believing that the people that I admired there were really wild people, and they were nomadic and that they, you know they really just eat everything they foraged and things like that.

The Role of the Teachers—Embodied Knowledge Gateways

The second subtheme of community of practice that participants used to describe their experience of socioecological learning opportunities is the role of the teachers as embodied knowledge gateways. At the heart of the community of practice are individuals whose way of life embodies and exemplifies the social and ecological values that bring the community together. The role of the teachers is to be masters of their craft and gateways to various forms of understanding, interacting with, and being in the world. Blair described their experience of the teachers in the spoon and bowl carving workshop saying,

> They're obviously like masters at what they do, and I could tell that. I'm going up to them like "Oh, what do we do next," or like "Is this the right cut" or so many questions you know, and they're just very capable and open and able to help and able to guide you through the technical making process. So yeah, like huge respect for people who are able to do that with their craft; it's really awesome.

Drew described how the teacher in the spirit workshops "opened up that portal" for connection with the land and guided the class through trance and meditation. Although Drew had a background with this kind of work and a value for the land, they felt that the experience opened up a deeper, more intentional connection to the land. I asked about those who did not have a background in the subject, and Drew noted the eloquence of the teacher's presentation,

> She just did such a great job of laying the groundwork of this new terminology, and she would go through this whole etymology of the words that she was using

and give the story behind it, and it was just beautiful. I mean, her presentation

skills are just beautiful, I mean like an artist.

Echo described just wanting to be around the people who knew so much about the earth

and lived in a way that modeled compassionate behavior. They described their experience

with a teacher in a class about foraging, saying,

I remember so much of what he said was just kind of like beyond me, you know. I

didn't have a good foundational knowledge of the subject matter to grasp

everything that he knew. But it was just like, I just wanted to hang around and like

osmosis, like be close to people like that. And I knew I was getting something out

of it. I didn't have to understand every word, you know, but it was just that kind

of experience. And not just him, I mean, I point to him because he was so

knowledgeable about plants and stuff, but I think all the instructors were like that

on some level …

When I asked if this desire was unique to their experience at AxSol, Echo replied:

I just think at [AxSol] there was so many. You know the amount of people that I

wanted to [learn from] like, I'm torn. Should I go over here, or should I go over

there? You know it's like I want to do it all. But of course, you can't. You got to

pick and choose. For instance, I wanted to go do that non-violent communication

thing. But … it's like all of a sudden, the (I don't know if it was a bell or a whistle

or whatever) went off, and the class was over. And then same thing in the

evening. I remember I went back after dinner and worked on my bowl with like

three or four other people. You know, and he [the woodcarving instructor]

basically shut it down because it was getting dark, and he's like, "You can't be using these tools in the dark; you're gonna cut yourself, and nobody's here to make sure you're okay if you cut yourself. Okay, you know, go dance or something else."

Flynn described the role of the teacher as both a culture carrier and a knowledge preserver. Flynn's own teaching focused on an art form that is in danger of being lost because it cannot compete in the fast-paced world of cheap consumerism. Flynn said that some of the teachers share their knowledge because that is the only way left for them to make a living from their craft. They are "not just doing what they do [teaching and practicing their craft] at the program, but also doing that as their career, as their lifestyle."

Community Connection Opportunities

Community connection opportunities are another subtheme of the community of practice that participants used to describe their experiences of socioecological learning opportunities. In addition to the classes, which I have explored in the next subtheme of shared practices, participants described how the program provided informal activities and ceremonial gatherings, which helped them feel connected. They also noted the potential significance of sharing food in a common gathering space, which many experienced as a lost opportunity for connection.

In contrast with other festival contexts they had experienced, Avrey thought that AxSol was designed with the goal of helping newcomers connect with established members of the community of practice. Blair echoed the sentiment saying,

It's one of those places, yeah, those immersive gatherings where there's so many

structures and both physical and like programmatic for you to connect with people

… I feel like I got to know a few people there pretty quickly by the first night or

second day. yeah, I mean definitely a little bit of yearning of like, "Oh, I can't

follow up with these people like I would if I lived here." … I remember I camped

near some people who were there with their young daughter, and then we were

near that communal outdoor kitchen, and I ate with them several times, and they

shared food with us, and that was really sweet. You know, at night I kind of

wandered into, got brought into some people's camps, who were playing music

and stuff, and people were really open.

In addition to the informal structures, the morning gathering provided a formal

context that facilitated community connection while providing course updates and

facilitated activities to meet the people next to you. Drew called it a "foundational pillar"

that was "unique to AxSol." Avrey described some of the details.

The opening circle was at 9:30 am, and that was actually after early morning

classes and breakfast time … and that included a welcome and a prayer -

nondenominational totally, you know, earth well prayer um … . I want to say

there was cowbell or something to kind of get everybody around … they read

whatever was going on, any changes in the schedule, safety tips and stuff like

that. The ceremonial aspect of that was kind of the beginning and the invocation,

but that happened every morning and it kind of started the day off … but

definitely, that morning thing did create a sense of community and got everybody

on the same page.

It could be challenging to form new connections outside of the classes and formal

gatherings, however. Echo observed,

There was less connection outside of the class. You know people are doing their

own thing; they're cooking and eating and taking care of their business. And they,

you know, I think inevitably people kind of gravitate towards their friends or their

acquaintances, and that's where they're at. And I came, I mean, except for my

daughter, I kind of came alone.

Flynn, who had experience with several smaller events, pointed out that smaller groups

made connections easier. AxSol was a larger program than they were used to, and

because it was more spread out, "connections were diffused."

Flynn also noticed a lack of "central gathering places for mixing," which others

particularly noticed in relation to the experience of eating. Avrey described a mess tent

for instructors and volunteers, which "you couldn't buy your way into … and one food

truck." There were also basic facilities for cooking and washing, but "[apart from that]

you were dependent upon yourself for food." Echo observed that a lot of the "senior,

seasoned AxSol people" were eating "in their private quarters." Like Blair, Echo ended

up sharing food with a "small camp that had their own cook stove … but it was quite a

long ways off, and so it was kind of a little inconvenient."

As a teacher, Flynn was the one participant in my study who had access to

purchase food from the mess tent for breakfast and dinner. I asked Flynn to describe their

experience of community around food. Although they recognized the logistical challenge of feeding hundreds of people, they said it was significant to their experience of connection and learning.

> Well, dinner was definitely the time – yeah, I mean there was [also] a lot of communicating going on at breakfast – I would say just being served together like standing in line together, talking, and then also sitting all together in the one eating place made a big difference, rather than going to my car and making a peanut butter and jelly - you know, by myself.

Flynn observed that the missing opportunity to gather over food made connecting more difficult.

> So, at AxSol, not everyone is fed, you know, and at [a related event], everyone is fed, it's just included in your price, and, for me, I feel like that's a really special time for, um, you know, having time to like really talk to people, because you all sit together [at the] picnic tables, and so you talk about your classes. You know, it's kind of like a recall, a mental recall, and just mixing in general. I'm learning from everyone everywhere, and this is great! There are a lot of times … I was just standing in line for my food, and I learned about, you know, this thing I never heard about before, and my mind's blown.

The importance of connection to the community is underscored by Chen's response to my question about how the program could facilitate their ongoing learning experience. It had been almost 2 years since Chen's 3-day experience, and Chen still wanted to feel connected to the community.

I like the little tutorial videos, I mean. I think it would be interesting to … God! I

mean, it doesn't even have to be a skill; I would like to just hear how different

people are dealing with pandemic and like, "How did it change your family?" or

"What are you doing right now?" … that would be interesting to me, and it would

make me feel connected more.

Shared Practices

Another subtheme of the community of practice describes the shared values that

brought the community of practice together and shaped participants' experiences of

socioecological learning opportunities. The shared values related to nature and

community were reflected and cultivated in the practices built into the program and the

topics of the classes. There are three aspects to this subtheme that participants used to

describe their experiences of socioecological learning opportunities: the role of the

classes, hard skills, and soft skills. Participants described the role of the classes as

providing an opportunity to connect with other people who shared similar values. These

values were categorized by participants, often with the terms "hard skills" or "soft skills."

Participants described their experiences with learning the hard skills and soft skills

through courses and workshops by sharing what they learned how to do, what the

practices meant, and the impact of the teacher, the setting, and the socioecological

integration of the shared practices.

The Role of the Classes. AxSol offered newcomers the opportunity to experience

all of the skills and try them on in a guided context that became an opportunity for

connection. Participating in the practices through facilitated workshops/classes created a

shared experience of socioecological learning opportunities that drew people to the program and then helped them connect with each other. When I asked why they chose AxSol for making new connections with people, Drew said,

> I think it's like-mindedness for sure. You know, when you look through sort of the curriculum and the skills that they're teaching, they are things that I was interested in. So, I just knew that … I'm gonna go hang out with some people and learn some stuff about things that we're all interested in, you know. I think that was sort of the thing that brought us together.

Blair suggested that shared connection in a pedagogical context was deeper than one might find in a festival or a concert because participating in a workshop demands a higher level of commitment than shared appreciation for a musical artist. Echo described their experience of connecting with people through classes this way:

> I had some incredibly meaningful conversations with multiple people just by sitting down next to somebody or in one of the classes/workshops, or whatever … I think the connection in the classes were there because you had that common interest, and everybody was like, you know, interested in doing this thing. And that commonality of that interest opened up the possibility to talk about everything else. And so that that's why I think the classes and the workshops were a huge part of what I enjoyed about it all.

The participants in my study distinguished between the hard skills related to craft, construction, survival, and food and the soft skills related to communication, relationships, spirituality, and community organizing. A unique aspect of this distinction

emerged as participants identified the hard technical skills as indigenous, traditional, or primitive, and the soft relational skills as a countercultural "progressive edge that is so far beyond everyone else," to borrow the words of Flynn. The resources to learn these practices were provided through immersion in the social and ecological context of the program, but this was reinforced and explicitly offered through instruction in what participants called classes, courses, or workshops. The dichotomy seemed to extend beyond class topics to describe distinct categories of shared values and practices. Echo summarized the social and ecological value of both kinds of shared practices, saying,

> If you're hiking out in the woods and you have knowledge of plants that are medicinal and edible and what not to touch and things like that. And then, as you're there, you know how to communicate better, so you're not like getting in fist-to-cuffs with somebody that you thought you were having a conversation with. That's empowering, you know, so I think everything they're offering is empowering us to live more in touch with who we are, instead of just buying into the consumerism that … we live in.

Hard Skills: Earth-based, Technical, and Craft. As part of their experience of socioecological learning opportunities, participants mentioned that they learned how to do several kinds of "basic" hands-on things that involve interacting with or shaping the natural world around them. Food preservation, backwoods fire making, archery, and massage represent the range of hard skills participants could choose to learn. They felt like the program was too short to develop mastery of these skills but reported a sense of pride in completing their introductory projects. Some projects lasted the entire weekend,

but others could be completed in just a few hours. Blair thought the brief introduction to many different skills fit with the overall goal of the program to preserve the crafts, financially support the teachers, and expose many people to an appreciation for "the expertise, and time, and practice of those types of crafts and appreciation for the fact that most of our ancestors had to do and know most of those crafts to survive. So important."

Although participants said they learned "how to … " do or make things, their description of the classes focused on the experience of being with the teachers, connecting with other people, and growing in unexpected ways through the practices of the coursework. Avrey talked about "bonding with the memory of my grandfather" through the metalworks course. Chen described the same experience as "way out of my comfort zone … but it was very good for me." Recalling their experience of making a musical instrument out of bamboo, Drew said,

> I just love that feeling that you get from connecting with something cool that you resonate with, you know, like when you learn an aspect about something that you never knew and. And you make all these connections with, like well, this skill is similar to this other thing that I learned, and you know so there's sort of that story, there's a story to it.

Flynn told a story about their experience in a massage class that demonstrated the integration of the hard skills with the culture and values of the community of practice. Although it was a technical hard-skills class, Flynn said the "huge moment" of learning was not related to the massage technique but "transcend[ed] basic knowledge." "I hardly remember anything from the massage class … but the thing that I came away with was

her explaining the ability to receive care." I asked about this integration of the hard skills with soft skills, and Flynn explained,

> It's not so like hard and fast; it's not about like you know, being able to start a fire with, you know, with a bow drill … . It's not about the skills so much. That key foundation is being like just very human. All the other stuff [the hard skills] just falls into place out of necessity.

In other words, the desire to give and receive care or live holistically in connection with nature and with other people naturally leads to the cultivation of earth skills. Echo described the connection saying,

> You know, farming and animal husbandry and making your own silverware or whatever it is; that simpler lifestyle, slower lifestyle so, then you can actually take time to have better relationships with not only with the people around you but with your own self.

> The experience of learning in the hard-skills classes helped to reposition the value of the activities. Some of the classes included time pressure because of limited or shared resources: "And because there was five of us, and we were sharing equipment, we only had so much time to do that … ". On the other hand, most participants reported a more laid-back experience. Echo said,

> Mostly I use power tools when I'm working, and this was not power tools! This is like down to earth, you know back to the basics, and there's no rush, you know it's … like there was no deadline to finish. There's no pressure to get it done.

> None of that. So, it made it more enjoyable to sit around and like while you're
>
> sitting around carving, then it was conversation.

Blair had a similar experience of learning in the classes or workshops:

> Sometimes I was there, kind of like taking notes and wanting to remember
>
> everything. Sometimes I was just like chill and enjoying the workshop. So
>
> definitely in the workshops, it's just about the hands-on and immersiveness. And
>
> then also all that in-between time to then go be finishing your projects or stay and
>
> talk to the teacher or have a meal with them, or you know where you get to follow
>
> up. And it's so different than another type of learning situation.

The extra time between classes was necessary to complete some of the tasks. For example, Avrey described a carving project that required so much perseverance that only two of the 10 people finished.

Soft Skills: People-based, Social, and Spiritual. Most of the first-time participants in my study were drawn to the program for hard skills, a phenomenon that is explored further in the subtheme of individualized learning. As a result, the description of soft skills as part of the participant experience of socioecological learning opportunities makes less of a robust contribution to the experience of shared practices than hard skills. However, a few participants did take one or more soft-skills classes with a "people skills" or spiritual focus and shared their experiences.

Not all the soft-skills courses were set up to be "listening things," as Avrey supposed. For a workshop on consent, which focused on helping you be more comfortable expressing and communicating about types of touch, Blair said,

We did some activities of like giving and receiving consent for really mundane things that didn't have to do with sexuality or like physical touch. And it was just like a new way of looking at it and a new framework that like brought up like it was about the like emotion, it was like noticing the emotions, you have for hearing "no" or hearing "yes". … I was very familiar with consent but doing a new activity and having a new framing of it was really impactful.

Flynn supported the importance of active learning in the soft-skills courses by describing an event they had attended with some of the other people from AxSol where two teachers simply talked over one another in what felt like an "ego trip." The students walked out. In contrast, Flynn described one of the teachers at AxSol used a method of taking and answering questions, which allowed everyone to participate and contribute while staying focused and organized, " … and the sentiment was that everyone was getting an extremely equal opportunity to contribute to the conversation."

In contrast with the hard skills, which required access to certain tools and resources to continue with, the soft skills had a direct translation into people's lives and experiences. Drew called them internal skills and shared with Echo an appreciation for how their experience at AxSol had prepared them for the isolation of the Covid19 pandemic. Flynn reported feeling equipped to respond to their child expressing a non-binary gender and also described the impact of the soft skills on their relationship with their husband, saying:

Our personal relationship would go to a slightly higher notch each time because we'd always end up breaking away from everyone and digesting what we learned

together. And then it would, of course, translate to something deeper going on

within us and it would like spur this whole conversation with tears and

everything. So that's where the soft skills really come in.

Theme 4: Self-Identity—Individualized Learning and Personal Growth Outcomes

Self-identity is a fourth theme that emerged from participants' descriptions of

their experiences of socioecological learning opportunities. They described self-identity

both in terms of what they brought to the learning experience (subtheme: individualized

learning) and in terms of how they grew from participating in the program (subtheme:

personal growth outcomes). Individualized learning opportunities included opportunities

for participation through taking classes, spending time with community or with nature, or

even having a solo experience. Participants recognized a distinction in levels of

participation between newcomers, "middle," and teachers. Reflecting on personal growth

outcomes they had experienced in the program, participants shared aspects of how they

saw themselves in connection with nature (embodiment), each other (empowerment), and

their own lives (personal agency). A quote from one of the two interview participants

who had children with them in the program summarizes this theme of self-identity as it

pertained to their daughter: "[the experience] gave her the freedom to understand …

herself at a young age and gave her permission to be herself."

Individualized Learning—Levels of Participation

Individualized socioecological learning opportunities were influenced by the

background of participants, by their motivation to attend, and by their approaches to

learning. The level of freedom provided by the context proved to be both a challenge and

an opportunity. The people I interviewed recognized varying levels of participation in the program, but all of them felt like their unique approaches to learning at AxSol were welcome and supported.

All of the participants shared how their backgrounds helped prepare them for the program. Everyone except Echo mentioned previous camping, hiking, or backpacking experiences. Both Avrey and Chen described packing and setting up a camp, though Chen confessed to being surprised by the cold nights. Blair, Flynn, and Drew all referred to experiences of similar cultural contexts (non-violent, back-to-the-earth, loving community). Blair and Echo both had extensive experience with crafting, woodworking, or hands-on making things. Blair said, "I'm the kind of person who's just like, if someone shows me like the bare bones of how to do something, I take it and run with it in terms of hands-on craft."

The background of individuals also influenced their motivation to attend and the approach they took to shaping their experience. For example, the four participants who shared they had recently separated from their significant other all shared ways this positively influenced their experience. The need to fill their time with quality experiences, to meet new people with shared values, or to challenge themselves in new ways all came directly from their background life experience.

Avrey took a highly engineered approach with careful planning that allowed them to access all of the classes they wanted to take. Like Avrey, Blair was interested in learning new skills, but the approach was more laid back.

I'm kind of one of those people who, like I don't look at all the programs beforehand, or like plan out my [time] I just arrive, and I'm like "okay, what am I going to do?" I mean, I think I knew I wanted to do some basket weaving, but I didn't look over everything. You know how … [each day] you went and looked at the schedule that they posted in that tent, and so I didn't really like look at things the day before even really. So, I guess I was a little surprised that, how when I was there, I was like "I'm so into this, I want to do everything. I want to like come back; I want to maximize." So, I think maybe I was surprised a little at how much I wanted to do every workshop that I could it was one of those very exhilarating weekends for me.

Drew had attended another program held at the event location and returned to AxSol partly because it was a "special piece of land" and "I love it."

Some of the impetus behind me going was like, you know, "I'm not going to fill my schedule up with going wall to wall classes and just be wore out at the end of the day, I really want to enjoy this beautiful nature." And just this diverse ecosystem, and so I basically took all of those spirit work courses, and then I took flute making … those are the only courses I took. And the other time I just I spent sitting by the creek and playing music and taking walks in the woods. Yeah, I spent a lot of time alone, and you know, connecting with people if I saw them around.

All of the unique approaches that participants brought to their learning experience were welcome and invited by the program context. According to Blair,

From where I was standing, everyone was having their own experience, and I didn't notice anyone being excluded. I think it's like a space and a program that invites like you to come have your own experience, and there's no right or wrong way to do it, right? So, if there's someone not participating in any classes, I wouldn't make that judgment that they're excluded, I would just be like oh they're doing their own thing …

Drew agreed, saying,

Yeah, I mean that's the beauty of the event … there's just so much freedom, I mean, I could have just went and camped the whole time and never gone to class right like that's what I love it's like yeah, I make my own time right. And that's what I loved about it,

Chen felt somewhat differently, however. They were the only person I interviewed who described themself as not participating in the ways they could have. They talked about how they might create a different experience for themselves next time around.

The peace and the harmony and the connection that I felt I think I would feel more comfortable to not be an observer. I would feel more confident in being a participant, and I most certainly was[nt? - this was not clear] a participant, but I don't know. I mean, that's sort of my personality: I need to feel things out, and I feel like I've felt that event out, and I would feel more comfortable communicating freely or insert myself in conversations a little bit more freely. My

state of mind might be different too, actually. I was choosing to have a solo

experience because that's what I needed at the time.

But in spite of reporting a solo experience, Chen described participation in several

courses, the completion of projects, repeat conversations with people, and the experience

of living together with the community of practice through the entire program.

Drew explained this phenomenon of learning from the entire context by calling it

an "open-source event" with "just a little bit of chaos" where "you are a participant in

every sense of the word."

[It was] a little perplexing at the beginning. Yeah, it was. But my personality is,

"That's okay, right, and just got to figure this thing out." And so, I just got to ask

some questions, and you just start talking to people you find out who knows

something, and then you learn something, and then you start pairing that to the

next person, and then we'll figure it out. And by day 3, we all know, we

understand what's going on … yeah, to me, that's the power that's the

empowerment of the event, right? It's like you're learning these skills together,

but you're also learning how to interact …

Levels of Participation

Although the experience of socioecological learning opportunities was highly

individualized, participants still recognized three distinct levels of participation in the

skills and values shared by the community of practice. The newcomer level of

participation begins with an interest in hard skills. Aside from Drew, who found AxSol

through an online search for conscious loving communities, everyone in my study was

drawn to AxSol to learn the hard (technical) skills offered there. Part of the reason is that the community experience is not advertised. Avrey said, "Unless you talk to somebody or unless you go, you really don't realize how accepting and how inclusive they are."

The middle level begins when participants have experienced some of the hard skills and recognize and begin to participate in the soft skills or the culture of the community. The first-time participants in this study recognized a distinction between their newcomer status and the middle people who already had a connection with the community. "I could tell," said Chen, "that there were relationships that were much bigger than those three days." When I asked about their motivations to return, participants in this study reported that it would be for the community and the soft skills. These examples demonstrate a transition from newcomers to middle participants. Flynn, who identified as a "middle person" despite their teaching role, provided this explanation of the difference between newcomers and middle people, saying,

> Obviously, the middle people are taking classes too. And the instructors are taking classes, too, but not with so much vigor. I think the people that get to the middle, like a lot of times, they've taken a lot of the classes already and they've met the instructors already, so they're just more there for like the culture; maybe they're there to hear music at night and dancing and to trade...

The teacher level refers to people who embody the way of life and focus on cultivating and spreading a unique skill. When I asked how someone could reach the teacher level, Flynn replied:

Yes, I think that if anyone has … a skill that's valuable to offer and they want to

take it to the next level, that would be creating more of a presence outside of the

program … as their career as their lifestyle. That would bring you to the next

notch because now you can - it's just inspiring because you're doing what their

goal is - which is to take what happens at the program and take it with you and

spread it around spread the good you know outside of the program, and it also just

kind of gives you clout: people know you, people understand you, you're

practicing it [your skill/teaching] more often, you're getting better at it … .I do

believe that entry-level people can make it in a very short time to an upper-level

person if they really devoted a lot of time to it …

Personal Growth Outcomes—Embodiment, Empowerment, Personal Agency

When I asked participants in this study about key takeaways or significant

moments of learning they experienced as part of the socioecological learning

opportunities provided by AxSol, their responses all centered around something they

discovered about themselves and their ability to relate to other people or to the world of

nature around them. These personal growth outcomes included three aspects:

embodiment, empowerment, and personal agency. Avrey observed that these aspects of

learning about oneself seemed to eclipse all the other potential outcomes of the program:

You know, I learned how to forge in coal, and I learned how to, you know, scrape

a deer bone against a rock long enough to turn it into a knife … I learned a little

bit about archery and a little bit about drumming … [but] no, I haven't ground

another knife and no I haven't made another awl, but you know I think some of

the greater lessons learned … that I carry forward today … .It was okay to be

weird there. There was a space, and it was okay to be yourself, you know, nobody

looked at you necessarily funny. But it was okay to be yourself, and that was that

something that … when you get that acceptance, it's easier to do that in the real

world - the confidence that you get.

Echo agreed, saying, "I think all everything they're offering is empowering us to live

more in touch with who we are, instead of just, you know, buying into the consumerism

that we that there's so much of it that we live in. Likewise, Blair described the experience

as

All of that continual learning about myself, and how I relate to people, and who I

am, and how I, you know, connect with others in this like highly social

environment. So that happening like 24/7 there.

Embodiment. The first personal growth outcome of socioecological learning

opportunities reported by participants was embodiment. Social and ecological aspects of

the learning context combined to inspire a sense of human identity that valued its

physical, natural expression. Chen's story of learning highlights the notion of honor and

care for the human body as part of nature:

I went into [AxSol] thinking that I was pretty like okay in my own skin, I was

okay, not wearing makeup comfortable with my body and things like that and.

And I came out of it, realizing that there's probably more for me to learn and

really questioning a lot of things and I'm, and I know some of this might sound

crazy, but like I think I was the only person I saw there that got into the lake with

a bathing suit on … But then it made me question a lot of my own body image stuff like, "why do I do this?" like "Why do I shave" like "Why do I do that: for me? or do I do that for society?"

And there was a lot of general things that were happening, but I think some of the real, concrete examples were my experience with swimming and just watching people interact. People would walk up to the lake and undress and go for a swim and then come back and dry on their towel, and then get dressed and carry on, and that was just a way to cool off, and then there would be mothers with their children and much the same process and it … [and I] just didn't get the impression that anybody was concerned about vanity, but not in a way that you would think like they did give the impression that they were concerned about their health um. It's like, everything that was served there was organic … . It was just really refreshing to see people connected to their environment okay in their own body … and, in fact, gave me a little bit of hope for society.

The learning context was designed in a way that reinforced the importance of caring for the body. In addition to their observation of others, Chen also had a personal experience that reinforced the importance of caring for the body. After not sleeping at night because of the cold, they shared,

What was cool is the second day, I did allow myself some time that I just laid in my tent, and it was nice and warm during the day, and I just took a nap. I thought it was really cool that was okay too. You know, you could go to these sessions

[classes] and you can learn, or you could choose what your body needed in the

moment, and I needed a nap.

Chen and Blair also talked about the women's red tent, which was a secluded place

designed, "that if you're menstruating that that's where you would go there was bone

broth and all kinds of things that might help nourish your body during that time, and I

mean it was all really interesting to me. Well, and it looked like a really cool spot to hang

out."

Embodiment was not an isolated phenomenon but deeply integrated with the

physical, social, and spiritual experience. For example, Blair said,

I think a program like AxSol kind of helps me feel earth-connected … .All of the

song and reflection and earth-connected practices helped me feel connected to my

spiritual self, and that's something that's really hard for me to do … .That

connection to other people and a spiritual way is like sparked, so I think about like

the sweat hut for like being in that on that beautiful land and like swimming in the

ponds, with people. Or, just like this very elemental human experience of

gathering around a fire and dancing around a fire and the darkness and

glimmering firelight and sweating and like stomping and dancing and moving

with other people.

Flynn and Avrey both suggested that this deeply physical experience was critical

to the learning process and described the profound difference between in-person and

online learning in the ability to connect with others. Avrey noted the importance of the

connection to place, saying, "I don't think doing things online would help at all." Flynn described the connection to people:

> I mean, you can smell the person, you can touch them, you can. You know it's just a completely different experience, and you know we're used to going around like in our brains right, but like when you come back down into your body, and it's all together, that's when you really make the progress.

Echo summarized the influence of the embodied experience on how they understood themselves in relationship with nature:

> Just closer to nature in general. A better understanding of how close we actually are to it, how we are nature, like we're not separate from nature, you know, and so there's that. I'm being reminded by spending all that time sleeping outside and being outside the entire time. It just reminds you that nature's fine, like you don't have to be scared of it or be intimidated by it … . Because you know what? I live in the house, and we drive our car, and I get separated from [nature], you know.

Empowerment. The second aspect of personal growth as part of socioecological learning opportunities reported by participants was empowerment. Several of the participants reported that the open design of the program enabled them to feel more like creators of the experience for themselves and others. Drew explained that the classes and the loose structure, which required participants to collaborate, ask questions and "figure things out," was "driving to a point, which is what I see as empowerment, and so I think the way that AxSol gets to it is through skills, you know building skills … through community." When I asked what they meant by empowerment, Drew replied,

"empowerment is just basically. You know it's like it's about sovereignty, agency … you can be empowered to sort of take action for your life."

This ability to take action may be the most representative idea of empowerment, but this was demonstrated in a variety of ways. Chen described it as the ability to "try something new and not be good at it." Avrey talked about their mindset of openness, which was "latent but primed and part of it was going to AxSol … and it's like 'well I got this, let's go ahead and do it.'" Participants described the ability to action in terms of learning how to do things with their hands, but also in terms of how to interact with other people. Blair described AxSol as an

> … important counterculture space for people to learn about and experiment …
> with like the idea of like how to relate to people outside of hetero normative
> patriarchal society that we're all in through our like educational institutions and
> family institutions and financial institutions …

Avrey, Blair, and Chen described objects or tools they had made and displayed in their homes. Chen said, "Well, I did learn to felt. I did finish it there. And I was really proud of it. And I displayed at my house … " Chen and Echo both mentioned they had continued to work on projects they began as part of AxSol. Echo described how learning to make things with your hands can be empowering both in terms of self-reliance and of freedom from depending on certain economic structures.

> You can do it yourself! It's very empowering to be able to make things for
> yourself. I think there were people in those bowl carving and spoon carving
> classes that had very little experience with hand tools, and I could just see how

much pride they were having, you know. I don't know if that's the right word but, but they were just enjoying making it for their own. They were doing it, you know! And I think that's it's empowering for people, self-esteem building.

Chen reported this exact experience:

The felting [class] was amazing. But that was a real tangible skill that I learned how to do and … I was on a mission like I was going to make this thing, and I could sort of see it; my God, and I did it! I made it was like a mountain and moon, and I put this little design around it, and it was really cool.

The ability to make things for yourself had more than just personal implications. Three of the participants described the notion of economic independence that one could cultivate through the skills that were being shared, instead of "relying on flimsily-made products that have planned obsolescence that you have to rebuy over and over again," said Blair. Echo observed that if you had the ability to make things for yourself, "you're not over-reliant on consumerism and Walmart and Amazon to just deliver to your door like you can do it yourself it's very empowering to be able to make things for yourself." Flynn, who had been in similar contexts to AxSol, noted that each one seemed to create a little microeconomy which is "the coolest thing ever" because it values the teaching and practice of indigenous and creative arts that might otherwise be lost to a disposable consumer economy.

Personal Agency. The third aspect of personal growth outcomes participants experienced with socioecological learning opportunities shows how empowerment led to a sense of personal agency or response-ability. Observing others, hearing their stories,

and collaborating in a countercultural context opened space for individuals to re-examine their ways of being in the world. Chen said, "I didn't [want to] move through life, making decisions because society told me to." Drew echoed this sentiment, saying,

> You can be empowered from you know how other people sort of navigate through the world, and maybe lessons that they've learned … if you have the agency and sovereignty to figure that out on your own right, if you can like have the skills to figure things out on your own and that that plays out for a healthier community worldwide.

Participants provided several examples of how empowerment influenced their experience of personal agency internally, in the context of the program, and afterward in their home communities. Drew commented that their course on spirit work introduced a "perspective that I'd never considered in the way that it was presented to me, and I was empowered to go deeper within myself." Avrey referred to learning about the opportunity to ask others for help and what that could lead to, saying. "It was that was another thing I kind of learned about myself that I knew about myself, and I knew the concept in general, but was allowed to exercise it in this space - and it worked out!"

Echo, who identified as an introvert with difficulty meeting new people, shared a story about helping a stranger they noticed at AxSol.

> There was a guy kind of camping near where I was, and I walked by with my daughter, and he was distressed, and I noticed it too by the look on his face … And I remember looking at him and asked him if he needed any help, and I ended up sitting down talking to him for like 25 or 30 minutes. And he was upset. And

to this day, I don't really know what it was … But I felt like that atmosphere of the whole program enabled me to reach out to this guy trying to help you know.

When I asked if the program influenced how they saw themselves as part of nature or human society, Flynn replied with a story of how they felt empowered to address a problem in their local community:

Absolutely! Definitely. I see myself as more. more of an active piece, rather than observer … Where I live, we're having a serious problem with … nitrogen loads in our waterway, and it's mostly sewage … And so I was first introduced to humanure … and I was just totally inspired, and so I'm doing it now. None of my poop is going in our river. It's all being composted, and I feel amazing about that empowerment. The empowerment is just off the chart because I don't have any excuses anymore. And I've even taken it to the point where I'm experimenting with it … , and I'm having a blast because I love science, and it's holistic, like you know it's meeting all these needs different needs for me. I feel like I'm doing the responsible thing, and then I'm also like learning. I'm taking my education to another level, with it, and then I can share that with other people.

Many of the people in Flynn's local community had moved away rather than trying to address the growing environmental problems they faced. However, Flynn noted that AxSol had played an important role in helping them to continue trying to make a difference:

So, when you go to AxSol, it's so inspiring. You see the potential, and you see that these things are possible and that the people actually exist. And once you

firsthand see the people that exist, it gives you so much hope … belief that it's

possible. And that's all you need; you just need to know that it's possible … . So,

it's just taking, you know, taking someone who feels kind of like hopeless and a

hopeless situation because you're just observing what's going on. And then

shifting into you know I'm responsible, I can do something I can it may be slow

and maybe slow progress, but I can slowly get to where I want to be.

Summary

This basic qualitative design study used open coding to analyze data collected

through six 90-minute, semi-structured interviews with purposefully selected participants.

The four emergent themes show that participants described their experiences of

socioecological learning opportunities in terms of the program, the culture, the

community of practice, and the self. All four themes played a role in shaping an

experience that reflected deep social and ecological integration. The program provided a

dedicated 3-day context for learning in a beautiful natural location with a community of

people who shared values, and enough pedagogical structure to facilitate an accessible

experience of shared practices for newcomers. The culture of openness and acceptance

formed by ways of communication created a space participants described as magical or

spiritual and where they found it easy to explore new ideas and practices. Although the

community of practice seemed to exist outside the context of the program, newcomers

were able to make connections to its experienced members through informal

conversations and facilitated experiences like classes or gathering around fires. Finally,

the exposure to the community of practice through stories, informal interactions, and

facilitated experiences provided an experience that centered around personal growth in areas of self-identity like embodiment, empowerment, and personal agency.

In the words of Blair, AxSol is a program "based on cultivating identity through community through connection with the land through [sustainable practices]." In alignment with Blair's perspective, my early analysis reflected a fifth theme of connection with nature. However, in the analysis and writing process, I realized that everything participants said about this fell into the other themes. In short, the experience of nature was so deeply integrated with the experience of the program, the culture, the community, and the self that I could not separate it from the other themes. My conclusion from this observation was that the findings described a deeply integrated socioecological learning opportunity. In other words, I found that participants described their experiences in terms of a socioecological setting provided for a group of people with socioecological values and practices to share socioecological experiences that informed a socioecological identity.

In Chapter 5, I will analyze these findings in light of the conceptual framework of situated learning and the model of socioecological approaches to environmental education. Then I will interpret each of the themes in light of the empirical literature explored in Chapter 2. I will also present the implications, limitations, and opportunities for future research that the findings suggest.

Chapter 5: Discussion, Conclusions, and Recommendations

This study used a basic qualitative design to explore how first-time adult participants described their experiences of socioecological learning opportunities in a short-term, immersive, community-based, environmental education program in the United States. The value of an integrated social and ecological approach to environmental education was unclear because few empirical studies had described programs offering this kind of learning experience. I conducted six 90-minute, semistructured interviews with purposefully selected participants and followed qualitative methods of coding to identify themes that represented the phenomenon of socioecological learning opportunities in the words of the students who had experienced them.

The findings of this study emerged as four themes that participants used to describe their experiences of socioecological learning opportunities provided by a short-term, community-based, environmental education program called AxSol (a pseudonym): the role of the program, the culture, the community of practice, and the self. All four themes were used by participants to describe a learning opportunity they perceived reflected deep social and ecological integration. According to the six newcomers I interviewed, the program provided an immersive 3-day context, a beautiful natural location, a community of people with shared values, and enough pedagogical structure to facilitate an accessible experience of shared practices. The culture of openness and acceptance formed by ways of communication created a space participants described as magical or spiritual and where they found it safe to explore new ideas and practices. The community of practice included people whose relationships extended beyond the program

itself, teachers whose way of life embodied the shared values and practices of the community, and opportunities for newcomers to connect with experienced members around social and ecological skills. Participation in the community of practice through stories, informal interactions, and facilitated experiences contributed to self-identity in areas of embodiment, empowerment, and personal agency. In short, I found that participants described their experiences in terms of a socioecological setting provided for a group of people with socioecological values and practices to share socioecological experiences that informed a socioecological identity.

In this chapter, I interpret these findings by exploring how they confirm, challenge, or extend existing scholarly knowledge. In the first part of this chapter, I analyze the findings in light of the conceptual framework of situated learning and the model of socioecological learning. Then I connect each of the themes and the empirical literature explored in Chapter 2. Finally, I close with an overview of the limitations of the study, recommendations for future research, and implications for social change.

Interpretation of the Findings

In this section, I interpret the findings about participant experiences of socioecological learning opportunities relative to this study's conceptual framework, which includes the theory of situated learning and the model of a socioecological approach to environmental education. Then I interpret the findings in light of the empirical literature reviewed in Chapter 2.

Interpretations of Findings: Situated Learning Theory

The first part of this analysis relates the findings about socioecological learning opportunities to one part of the conceptual framework: the theory of situated learning developed by Lave and Wenger (1991) and elaborated for geoscience education by Donaldson et al. (2020). The focus of situated learning theory is on learning as legitimate peripheral participation, or the means by which newcomers can develop a sense of embodiment/identity in a community of practice through participation in an authentic context. The following sections present my analysis of the study's findings as they intersect with legitimate peripheral participation, its elements of community of practice, authentic context, identity/embodiment, and the role of the teacher. Themes from the findings have been mentioned wherever they intersect with the conceptual framework.

Legitimate Peripheral Participation

Lave and Wenger (1991) identified the primary challenge of situated learning as a question of accessibility. AxSol answers this challenge by offering a temporary authentic context where newcomers access opportunities for participation in the shared socioecological values and activities of the community of practice. Although they did not feel excluded as part of AxSol, several participants in the study, all reporting on their first experience with the program, described a feeling of peripherality in which they knew they could take part in a temporary experience of shared values and practices but were "not part of this community," to quote one of the participants. The experience of welcome and accessibility stood in contrast to a sense of possible "cliquiness" from a "tight-knit" community returning participants who knew each other outside of the

program. Limited by the 3-day program, participants felt they could not reach a sense of *full participation*, the phrase used by Lave and Wenger to describe the ultimate trajectory of learning. Efforts to learn after the program ended were hampered for Blair by distance from the local area, for Avrey by lack of access to an authentic context (especially for practicing the hard skills), and for Echo by Covid-19, which put a halt to ongoing connection to the community. It seems that AxSol facilitated an introductory opportunity for legitimate peripheral participation but not an ongoing pathway to full participation through embodiment of the socioecological values and practices shared by the community. Flynn thought it should be possible for anyone to reach this goal of full participation, but others expressed the desire for ongoing support to overcome the challenge of learning outside of the temporarily created authentic context of AxSol.

Community of Practice—Set of Relations

Lave and Wenger (1991) described the community of practice as "a set of relations among persons, activity, and the world" (p. 98). The theme of community of practice emerged in the study as participants described shared values and practices related to how they interacted with each other and with the world. For AxSol, these shared values and practices were socioecological. According to Avrey, all the classes contributed to helping participants relate with either nature or people. The study's theme of culture demonstrates how the value of openness and acceptance and the shared experiences of learning reportedly helped participants feel like they were part of the community of practice. Participants in the study described community connection opportunities like conversations and the role of the teacher in modeling particular

behaviors, which aligns with Donaldson et al.'s (2020) work that suggested individuals might use social interaction, peer collaboration, and mentorship as tools to navigate the learning experience. However, Donaldson et al. analyzed data from formal programs, so the findings of this study extend their work by suggesting that these elements can be used or enhanced through a process of co-creation or collaborative contribution to the learning context. Participants in the study played an important role in shaping the set of relations they experienced with the community of practice through their background, mindset, and openness to the process. In other words, participants contributed to the learning experience, which was critical to their feeling part of the community of practice.

Role of the Authentic Context

Lave and Wenger (1991) looked to an authentic context to provide opportunities for legitimate peripheral participation. In this study, I explored a program that created a temporary authentic socioecological learning context through 3 days of immersion in nature and community. Participants described the authentic context of AxSol as a physical space immersed in nature, a time-space that felt like its own time zone, a counter-cultural space with opportunities for experimentation, a community space with structures to facilitate connection, and a pedagogical space with opportunities for guided practice.

In alignment with situated learning theory (Donaldson et al., 2020; Lave & Wenger, 1991), participants in this study observed that the authentic context permitted passive observation while actively inviting participation. This part of the authentic context demonstrated a cultural value of openness and acceptance—a key part of

enabling individuals to learn and grow in terms of their self and identity. An example of this comes from the participants who said they were not exposed to the ideas for the first time at AxSol, but it was the first time they felt the opportunity to try them out. There was no attempt to force conformity, but rather a culture participants described as magical that seemed like an unwritten rulebook to which they gradually acclimated. This finding aligns with Lave and Wenger's case study of a 12-step program that did not correct participants' behavior but welcomed them into a community and gradually observed conformity to the group practices.

Although my literature review did not indicate that culture might play an important role in student experiences of socioecological learning opportunities, participants in this study emphasized that the culture of openness and acceptance seemed foundational to their experience. Flynn said opening up was the most important part of learning, and Echo commented that all of the people who had already done so created a context where "you can't help but" do the same. The emphasis participants in this study placed on culture as shaping their experience contributes to situated learning theory by suggesting the importance of not just the activities but also the shared values and the approach to those activities. For example, participants described the initial ceremony of lighting the fire as a magical or spiritual activity that emphasized the connection between the people present, prior programs, and nature itself. Pike (2018) identified this as an indigenous value for activity itself, not just for the practical outcome of the activity. For example, Avrey experienced the value of one of the hard-skills classes as the opportunity to connect with their grandfather, who had also done the same craft. Echo thought that

the way people approached the skills could translate into a lifestyle of deeper connection to nature and other people.

A final aspect of the authentic context addressed by the findings came from participants' unprompted challenges to the notion that the program could provide authentic socioecological learning opportunities online. Donaldson et al. (2020) explored the idea of virtual authentic contexts, however, this study (see also Kudryavtsev et al., 2012) showed the significance of place to shape the student experience of socioecological learning opportunities.

Identity—Performance, Self-efficacy, and Recognition from Others

In alignment with the theory of situated learning, participants in this study did not describe their learning in terms of meeting standards of performance in activities but in terms of self-identity, which reflected practices and values the community had modeled. Participants emphasized a wholistic growth process related to their self-identity, including aspects of embodiment in nature, empowerment in society, and personal agency. Only one sub-question in the interview guide referred to this directly, so participants' focus on self-growth came in response to prompts about significant moments of learning and key takeaways: wide-open questions that participants focused on examples of how they perceived they had personally changed. Practicing the social and ecological skills brought many participants to an "I can do this" moment, where they recognized their self-efficacy. Flynn described personal "response-ability" when discussing their effort to address environmental challenges in their local community.

In contrast with Donaldson et al. (2020), participants in this study did not place any emphasis on recognition from others as part of their experience of identity or embodiment. The cultural context provided so much openness and acceptance to diverse expressions that it seemed more of an individual recognition of capacity than a socially reinforced identity. Further research with returning participants is needed to understand how they process their ongoing ability to participate in the community as this was hampered for participants in this study by the onset of Covid-19 several months after the program ended. There is also the possibility that volunteering to participate in this study provided a sense of validation that first-time participants needed. Perhaps returning members did not respond to the interview invitations because they had no need for external validation of their membership in the community of practice. All of the participants in this study had been newcomers who expressed interest in further connection with the community, demonstrating that this was significant to their ongoing process.

Role of the Teacher

Like Lave and Wenger (1991), participants in this study distinguished between the teaching curriculum (what the teachers offer) and the learning curriculum (what students learn in the context). The theme of community of practice supports the role of the teacher as one of extending beyond instructional discourse to involve the creation of authentic learning contexts where learners can find legitimacy, guidance, and access to the resources and relationships necessary for participation in the community of practice (Lave & Wenger, 1991). Participants talked about the instructors' modeling of

communication and their embodiment of a lifestyle they wanted to cultivate for themselves. They did not recognize a clash between their contributions as newcomers and the established values or practices of the community, as expected from Lave and Wenger. Their lack of recognition may suggest that newcomers were not far enough along in the participatory practice to contribute meaningfully to the community values. It might also suggest a high level of receptivity among the long-term members for anyone in the community to contribute or that newcomers are not yet attuned to this aspect of AxSol's dynamic learning community. The idea of a receptive learning community is reflected by the culture of openness and acceptance and by participant observations that there was no evident hierarchy in which long-time participants looked down on newcomers. AxSol may demonstrate the value for ongoing learning (Leap & Thompson, 2018) or suggest that the community identity is consistently open and evolving. Even the teachers, Flynn noted, were taking classes.

Interpretation of Findings: Socioecological Model

In this section, I relate the findings on socioecological learning opportunities to the model of socioecological approaches to environmental education, the second component of this study's conceptual framework. Kyburz-Graber (2013) described the socioecological approach to learning as constructive, reflective, critical, and participatory. Participants in this study demonstrated the constructive nature of learning in their discussion of classroom experiences and the overall context to which everyone contributed. Drew described opportunities for reflection in nature, and Chen described their shared reflection through conversation with other people. Blair and Flynn described

a progressive counter-cultural context for experimentation and a microeconomy, which provided a critical counterpoint to mainstream society. Finally, the idea of participation was outlined in the interpretation of the findings related to situated learning theory.

This study helps to extend the research of Kyburz-Graber et al. (2006) from a formal classroom context with school children to an informal community learning context with several hundred adult participants. Like Kyburz-Graber (2013), I found that the socioecological approach invited both a critical discussion of complex and controversial real-world issues involving both the teachers and the students. The importance of an interdisciplinary approach highlighted by their model was demonstrated at AxSol by the diversity of classes and by the culture of openness and acceptance. The theme of culture also contributes to the socioecological model because Kyburz-Graber et al. conducted their case study in a classroom context. Participants in this study attributed their learning to the context, the community, and their participation, not necessarily to classes taught by interdisciplinary faculty.

Further, according to Kyburz-Graber (2019), the socioecological approach can serve as a bridge between individual experiences and global-scale problems by creating space for localized and divergent understandings and approaches to evolutionary ways of being in relationship with nature and society. Participants in this study emphasized the localized learning experience both in terms of their connection with nature and their experience of other people. This description provides evidence that AxSol has avoided the common problem of abstraction, in which decontextualized learning creates a sense

of disconnection between individuals and the object of their examination (Affifi et al.,

2017).

Interpretation of Findings: Empirical Literature

       This section interprets the findings about socioecological learning opportunities in

light of the empirical literature reviewed in Chapter 2. The four themes include the role of

the program, culture – tone of community, community of practice, and self-identity –

individualized learning and personal growth. I have related each theme to the relevant

literature to show where it confirms, contrasts, or extends existing knowledge about

socioecological learning opportunities.

The Role of the Program

       According to the six newcomers I interviewed, the program provided an

immersive 3-day context, a beautiful natural location, a community of people with shared

values, and enough pedagogical structure to facilitate an accessible experience of shared

practices. Participant descriptions of the role of the program in socioecological learning

opportunities intersects with existing research on flexible, collaborative learning

experiences, immersive contact with nature; the importance of community; and the need

for "bridging organizations." These areas of intersection between the theme and existing

literature are elaborated in this section. Rousell and Cutter-Mackenzie-Knowles (2020)

described a majority of published research on environmental education as representing

top-down, institutionally driven, behavior change approaches. This study addressed the

need for more research on environmental education programs designed as a cooperative

construction of the learning experience: an interplay between teachers, students, and the

learning context. Drew and Avery provided examples of the dynamic learning context they experienced, which both shaped and was shaped by the participants (see Davis et al., 2020). According to Drew, in this kind of collaborative learning environment, the experience is always new and changing. Gray and Colucci-Gray (2019) provided evidence from college-age students to suggest that a flexible and adaptive pedagogy was a significant factor enabling the students to cultivate self-understanding within the learning environment, which this study's findings confirm.

Part of the role of the program was to provide immersive contact with nature. Participants like Avrey reported that their experience of socioecological learning opportunities helped them feel "connected to the rhythms of nature." Marin and Bang (2018) contrasted decontextualized scientific inquiry, which they claimed predominates in formal classrooms, with an indigenous tradition that recognizes the land as a source of knowledge and action. Participants in this study confirmed that living in nature for 3 days helped to contextualize the learning process. Williams and Chawla (2016) observed that a young person's identity relative to the environment is formed through sensory and emotional engagement with particular places and through a sense of belonging to a social group. This study of the AxSol program demonstrated a similar influence with adults who formed a connection with the particular land on which the program was held through their activities, experiences, and co-created meaning (see Nelson et al., 2020). As Blair exclaimed, "[the location] is coming back into my life." Love, beauty, and a desire to return to the land predominated participants' discussion of the natural setting where the program was held.

Participants in this study depended on their prior experiences to help them navigate the socioecological learning opportunities. Jose et al. (2017) found that the value of outdoor field experiences depended on the students' prior knowledge (often gained in the classroom) and experience. All of the participants in this study reported prior knowledge related to camping or hiking outdoors. Individuals without this baseline skillset may not be able to participate in the program, which requires the ability and equipment to participate in outdoor camping and cooking. Participants did not mention any preparation or follow-up work facilitated by the program, which Rickinson (2001) and Stern et al. (2014) indicated may be an important part of the environmental education experience. Perhaps the lack of support in this area might help to explain why Avrey and Blair noted the apparent lack of racial diversity among participants, similar to findings by Pike (2018).

The first theme's elaboration on the role of the program also responds to the research of Ulbrich and Pahl-Wostl (2019), who found that permaculture practitioners (who might also be teachers) and students struggled to find an authentic context for learning that included immersion in nature, learning in community, and opportunities for holistic practice. Studies of socioecological programs by Germein and Vaishnava (2019) and Williams and Chawla (2016) both provided examples of such a context, but their findings were limited to children in a formal school program. This study of AxSol extends their findings about socioecological learning opportunities to informal education for adult participants.

Smith et al. (2020) found that social learning was a useful framework for understanding the flow of knowledge and used the term bridging organizations to describe how programs might play a role in facilitating this flow. Fenton (2016) called this kind of programmatic structure a "third space" or community link that made indigenous knowledge accessible through facilitated practices. Like participants in this study, Fenton also found that participation in these practices led to both internal and external transformation. In other words, the bridging organization not only created opportunities for developing one's practices but also for developing a sense of identity in relation to those practices and the natural context in which they were situated.

Gould et al. (2019) suggested that the structures facilitating access to information may be more significant for long-term social change than the information itself. If this is the case, then the details participants provided about the program structures AxSol uses to facilitate socioecological learning opportunities are an important contribution to existing knowledge. However, the eagerness of first-time participants to return, combined with their reported lack of ongoing practice with the skills, suggests an ongoing need for a program to facilitate their participation in the community of practice beyond the first 3 days.

Culture—Tone of Community

The second theme reflects a culture of openness and acceptance formed by ways of communication encouraged by the community of practice. Participants described this "magical" or "spiritual" culture as providing a safe social space for them to explore new ideas and practices. In my review of the literature related to socioecological learning

opportunities, there was little research found to suggest the significant role of culture that participants in this study reported. However, several aspects of the theme of culture intersect with existing research and are explored in this section. These aspects include experimentation with identity, meaningful activity, and the role of communication in culture creation. The overall lack of emphasis on culture in the literature I reviewed related to socioecological learning opportunities suggests that this theme may be a significant contribution to existing scholarly knowledge.

The findings of this study related to the culture of openness and acceptance align with Wolff et al.'s (2020) summary of the literature on early childhood education in the Anthropocene, which suggested that active experimentation within a safe environment can be a critical part of helping students develop a sense of agency or ability to act. Because of the safety and trust provided by the culture of openness and acceptance, first-time participants in this study reported they felt free to play and explore different aspects of themselves and their relationship to nature and community. For example, Blair described a "counter-culture" where it was possible to try on various roles and actions, and Chen felt free to question certain lifelong habits. These examples confirm the findings of Williams and Chawla (2016), related to the formation of a sense of environmental identity through "sensory and emotional engagement with a location … [and] a sense of belonging to a social group" (p. 994).

Activities in a holistic practice can be ritualized as part of involvement with the community through a common way of life (Pike, 2018). Participants described the culture using words like magical or spiritual and describing ceremonies like the opening fire as

creating a kind of relational connection with previous communities who had gathered.

This approach to fire also connects with Pike's (2018) study on the use of tools for

practice and experience in a bushcrafting context, which showed that the meaning and

effectiveness of using tools is not just about the physical context, but about the social

context that provides meaning to the movement. Avrey exemplified this by talking about

the metalworks class, where they experienced a connection with the memory of their

grandfather. Flynn also described this when the massage teacher helped them to

understand the importance of receiving care. In the cultural context of AxSol, learning is

not just about the activity but about the potential meaning it contains.

Participants in this study suggested that the way of communication was an

essential part of forming and spreading the culture of AxSol, which confirms the findings

of the sole study reviewed in Chapter 2 that focused on social interactions as a way of

forming a sense of connection and care for others and nature. Nielsen and Ma (2018)

found that explicit training in skills for relating to other people (i.e., ways of

communication) enhanced students' relationships with each other and nature. They also

noticed that the encouragement to practice these skills led to the formation of a culture

where students felt comfortable, safe, and generous with each other. Similarly,

participants in this study noted that the cultural context of AxSol enabled them to

exercise compassion and care for other participants they found who needed that

interaction.

Community of Practice

The community of practice described by participants included people whose relationships extended beyond the program itself, teachers whose way of life embodied the shared values and practices of the community, and opportunities for newcomers to connect with experienced members around social and ecological skills. This section explores where the theme of community of practice intersects with existing literature on the influence of the community on learning, the levels of participation described by this theme, and the role of skill development like storytelling or spiritual practices.

Learning in community played a significant role in the experience of participants in this study. As Chen emphasized, without the people, the experience, for them, would have been just like any other camping experience. According to Grilli and Curtis (2021), social influence, especially in a face-to-face setting, can be an incredibly effective part of environmental education when coupled with a sense of belonging to a community. They noted that this could influence a person's overall way of life. Chen provided the clearest example of this when Chen's observation of people swimming and caring for their bodies inspired Chen to reconsider many of Chen's life habits and tendencies.

Participants in this study seemed to demonstrate the trajectory of learning in all of the levels proposed by Goralnik and Nelson (2017). Participants described their initial motivation to attend AxSol as learning how to do something for themselves, which does not imply or deny the dualistic starting point Goralnik and Nelson identified where individuals see themselves as separate from nature. However, in this study, the participants all reported or demonstrated learning in the second level (the theme of self-

identity), which Goralnik and Nelson identified as self-awareness and personal development. Participants also reported a desire to return to AxSol to participate in the community and continue their participation, a direct reflection of Goralnik and Nelson's third level of social learning and sense of community. Finally, participants noted the need for full emotional and cognitive engagement with the values and practices of the community in order to reach the next level of learning. This demonstrates Goralnik and Nelson's fourth level, leading to a final stage of relating to nature with empathetic awareness and complexity. Participants in this study identified the teachers (the community members who fully embodied the practices of the community) as living in this way both in relationship to nature and to other people.

Lin and Li (2018) suggested that a process of storytelling could change people's attitudes and give new ways of understanding their connection with nature. In AxSol, it was not just the stories; it was the whole context and way of life demonstrated by the teachers that participants used to form a grand narrative of people living in harmony with nature and each other. First-time participants in the program described the established members of the community of practice as living or embodying the knowledge and practices that they shared. The image is almost magical and unrealistic, said Flynn, but still, it gave Flynn hope to see and hear of people who were living in the way that they were looking for. In contrast, Flynn also observed that storytelling could have a negative influence when it did not align with one's actual practice.

Spiritual practices at AxSol were defined broadly by participants in this study with reference to storytelling, spirit work, shamanism, and other indigenous traditions.

For example, several participants reported that the experience of the Native American sweat lodge played a significant role in shaping their experience of the culture and helping them open up to learn. Drew focused most of their experience on cultivating a spiritual connection with the land. This finding extends the research of Gómez-Olmedo et al. (2020), which found that spiritual practices like mindfulness and introspective practices could improve individuals' relationship to the land.

Self-identity—Individualized Learning and Personal Growth

The fourth theme of self-identity includes participants' reports of how they contributed to the socioecological learning experience and came away from AxSol with personal growth in areas of embodiment, empowerment, and personal agency. These findings intersect with the literature on socioecological learning opportunities in several places. The link between identity and pro-environmental behavior, the influence of community on identity, the importance of directing one's own learning process, seeing oneself as part of nature, and the embodiment of knowledge are explored in this section.

This study's findings of this study align with those of Knapp et al. (2020) and Simms (2020), who suggested a link between pro-environmental behavior and a sense of environmental identity, which they claimed can be shaped by exposure to community. Flynn provided the only participant example of pro-environmental behavior outside of the program, so this study does not necessarily strengthen the assumption of a link between identity and behavior. However, participants demonstrated the influence of participation in a community of practice on one's sense of self-identity. The learning process itself was perceived as significant to the outcomes that individuals experienced.

Participants described an experience of whole-person immersion and transformation that wove together a sense of identity with the cultural values and practices of the community. Nearly all of the outcomes of learning they reported fell into the theme of self-identity, which reflected the socioecological values of the community for connection with nature and community.

A consistent and underlying theme in the literature on environmental education is the idea of self-efficacy (Donaldson et al., 2020; Stern et al., 2014), self-regulated learning (Cloud, 2017), and self-determination (Davis et al., 2020). The ability to direct one's learning process is not always treated as an outcome of environmental education but rather as a supportive part of the learning process (Donaldson et al., 2020). The theme of self-identity confirmed the significant role that self-determination can play in the learning process. Drew said they would not want to participate in a program that prescribed the entire learning process. Flynn referred to being empowered toward creativity beyond the confines of what they had learned at the program.

Within the context of the immediate learning community of AxSol, individuals reported a sense of identity as part of participating in the community both as receivers and contributors. The findings of this study somewhat challenged those of Goralnik and Nelson (2017), which suggested that it was important to distinguish between learning to navigate the social context and the learning that happens within a social context. Participants shared that learning to navigate the social context was critical to the learning process. "Opening up is the most important part," said Flynn, who emphasized the role of the culture and communication in preparing individuals to learn. According to Drew,

"figuring out" what was going on in the learning context was an essential part of self-empowerment and connecting to others. Although this finding was in a micro-society, this aligns with Jorgenson et al. (2019), who suggested framing learners as active participants in society.

The experience of socioecological learning opportunities was perceived to help the participants to form a relationship with nature, which Clayton (2003) defined as "a sense of connection to some part of the non-human natural environment [and] a belief that the environment is important to us and an important part of who we are" (pp. 45-46). According to Echo, the program brought them "closer to nature in general. [The experience provided] a better understanding of how close we actually are to it, how we are nature, like we're not separate from nature." Echo's words confirm Haukeland and Sidsel's (2020) finding that seeing oneself as part of nature, not just interacting with it, was critical to sustainable behavior. Echo traced this perspective to a learning experience that was deeply embedded in a natural setting. Fenton (2016) described ways of knowing through intimate connection with nature (see also Marin & Bang, 2018) that provided a unique approach to learning. This finding also reflects Lin and Li's (2018) work, which found that storytelling could help participants change their perception of nature to one of sentience and kinship. For example, Drew talked about the difference between connecting with a tree and connecting with a person only in terms of the type of interactions available in either social setting.

Fenton (2016) found that the link between knowledge and indigenous practices formed as knowledge became embodied in the individual learner through skilled practice

– often in an apprentice-style inquiry process. The 3-day program provided by AxSol did not include enough time for newcomers to develop this depth of knowledge. However, Pike (2018) explained embodied learning in terms of the crafting process where one's whole body was involved in building a fire or threading a basket, using terms like sensual and embodied to describe this experience of learning. Participants described the making process within the context of AxSol as a slower pace of craftsmanship, which enabled connection both with the project itself and with the other participants in the activity. Additionally, they explained that embodied learning was an important part of developing soft skills, which suggests further dimensions to the relationship between embodiment and learning.

Limitations of the Study

In this section, I describe the limits to trustworthiness that came from the execution of the study of socioecological learning opportunities. Several of the limitations outlined in Chapter 1 remained the same, including the dependency on a single program, 2-year-old memories, effects of the Covid-19 pandemic, the small sample size, homogeneity of the sample, and transferability of the findings. Limitations around personal bias, software use, nonverbal feedback proved to be less significant than anticipated in Chapter 1.

The primary limitation of this study is its dependency on a single program offering socioecological learning opportunities. Student experiences with AxSol reflect the program, but the program may not fully represent the innovative phenomenon of socioecological learning opportunities as the 2019 program was the first year with this

explicit intention by AxSol. Another methodological weakness of this study was a dependency on the students' memories of the learning experience. Initial designs for data collection had presumed a summer 2020 program, which was canceled because of the Covid-19 pandemic. For this reason, memories evoked during the interviews were nearly 2 years old. Several participants used the sample questions I provided in the consent form to prepare for the interview by making notes or collecting artifacts from their experience at AxSol. The extended time between the experience and the reporting may provide greater insights on long-term transfer, but it may not capture the factors that influenced the immediate experience. Furthermore, the pandemic of Covid-19 produced some unusual circumstances that may have caused participants to place more emphasis on certain aspects of the experience (like community) than they might otherwise have done.

The small sample size is a limitation of the study because it may not demonstrate an exhaustion of potential thematic elements. Every person I interviewed had a unique story of the learning experience. Although I reached theoretical saturation (Glaser & Strauss, 1967), I did not reach thematic saturation (Guest et al., 2006), in which additional interviews provide no additional diversity of perspectives on the phenomenon. For example, none of the self-selected participants I interviewed had a negative experience with the program. The sample size was sufficient to identify the core elements of the experience that were shared and confirmed by all participants in the study. Still, there may be some peripheral experiences that are not represented in the data.

Another limitation of the study is the homogeneity of the sample. The only individuals who responded to the interview requests were those who had attended the

program for the first time in 2019. None of the returning participants responded to the invitation to interview. This circumstance led to a greater level of homogeneity among the sample, but also to a narrower scope as the findings only represent the experiences of first-time participants. Participants recognized three levels of participation and placed themselves in the first level (with the exception of Flynn, who identified as a middle-level participant because of prior experience with a related program). This means that only the first level of participation (newcomer) is represented in this study. Nevertheless, the coincidental increase in homogeneity also reduced a potential limitation identified in Chapter 1, which anticipated that returning participants might combine their memories of the 2019 program with previous years when AxSol did not have the same socioecological focus. As a former participant in a related program, Flynn was the sole participant who demonstrated this limitation.

The limitation of transferability is particularly relevant to this study, which framed environmental education in Chapters 1 and 2 through a diversity of traditions in an effort to focus on common learning challenges. The findings of this study align with the goal of environmental education to facilitate a change in behavior that benefits nature and humanity (Clark et al., 2020). However, they will transfer most easily to those few contexts that focus on broad-based, long-term change in behavior (Grilli & Curtis, 2021). This study also has a limited ability to inform the design of formal learning contexts that do not have access to an outdoor setting.

Three of the limitations outlined in Chapter 1 did not prove to be as challenging as I expected: personal bias, software use, and nonverbal feedback. As noted in the

section on trustworthiness, I was able to navigate the limitations of researcher bias through transparent reporting of my positionality as a researcher, careful analysis of the data, and thorough record-keeping to create an audit trail (Ortlipp, 2008). All participants were familiar with using Zoom, and the video software enabled non-verbal feedback, which I noted in the interview guide. However, there is still potential that virtual interviews discouraged participation from potential volunteers who did not want to interview using technology.

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Recommendations

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In this section, I outline several recommendations for future research on the basis of the strengths and limitations of the study, including suggestions for sampling, data collection, and research design that may provide unique insights or fill gaps in the current study of socioecological learning opportunities.

In response to the primary limitation of this study, a recommendation for future research would be to collect data on a similar program to identify common features that appear to contribute to the socioecological learning opportunities. All the participants in this study demonstrated a positive experience with the socioecological learning opportunities provided by AxSol. As suggested in the limitations section, this attitude may not represent all participants in the program. A more representative sample might include individuals who prefer not to communicate with digital technology or open the newsletters from AxSol. This may require methods of data collection like observation, participatory research, or in-person group interviews during the program. Additionally, a

fuller perspective of socioecological learning opportunities may also be provided by a sample that that includes people who held various roles in the program.

Participants reported that the pedagogy of AxSol is both implicit and explicit; they connected their learning to the overall context and community rather than to the classes themselves. Because I interviewed first-time participants, I have no way of distinguishing what aspects of their experience might have been present in a program without the same explicit emphasis on a socioecological approach. The first-time participants in this study did not experience AxSol before it adopted an explicit socioecological focus. Future research should explore the perceptions of returning participants who may have more capacity to describe the strengths and weaknesses of AxSol's socioecological approach in contrast with its prior emphasis. This comparative study could also lead to a greater understanding of which cultural aspects depend on the program and which arise naturally within the community of practice.

The findings demonstrated a clear alignment with Lave and Wenger's (1991) theory of situated learning. However, my exploration of their theory did not prepare me to expect the significant role of the culture in participant experiences of socioecological learning opportunities. Future research studies might find it beneficial to study socioecological learning opportunities with a theoretical framework related to culture or a sense of belonging. Further research on situated learning could also elaborate on the three-step process that individuals identified as levels of participation. The middle group of participants who are neither newcomers nor teachers is particularly ambiguous. It is unclear whether they need a different set of learning supports than the newcomers in this

study described. Quantitative survey research might also be useful for helping to confirm, drawing on a wider pool of participants, the core values of the community of practice, the time it takes for individuals to embody these practices, and the supports individuals need at various levels of participation.

Implications for Positive Social Change

In this section, I explore the implications of the study for positive social change. The first part includes a focus on changes in individuals' social relationships. The second part features the function of a program like AxSol and suggests opportunities for improvement. The third part includes the implications of this study for environmental education programs that might wish to incorporate a socioecological approach. The fourth part highlights the implications of this study for addressing global environmental challenges.

Individual

Participants in this study shared how the experience of socioecological learning opportunities empowered them to contribute to the learning experience (Avery), share their knowledge and skills with others (Blair), live in an open and accepting way (Chen), connect more deeply with nature (Drew), cultivate community (Echo), and experiment with solutions to local environmental problems (Flynn). These examples present a broad range of implications for positive social change on an individual level. However, the individual implications also reach into society. In the words of Drew, "if you have the agency and sovereignty … if you can have the skills to figure things out on your own … that plays out for a healthier community worldwide."

Program

Patton (2015) described the pragmatic value of research for discovering areas that a program could improve. At the programmatic level, AxSol may address the potential challenge of accessibility by providing basic instruction and equipment for the outdoor camping skills that are required to participate in the program. There may also be potential for AxSol to support participants in learning after the program by facilitating connection to the community and access to authentic learning contexts. In light of recent trends toward online learning, program developments should consider the influence of location, time, and community on the participant experience of an authentic context for socioecological learning opportunities. As participants suggested, the role of digital technology may be limited to facilitating community connection and access to learning spaces rather than providing information or training. Finally, AxSol should address the lost opportunities for community connection around food in future iterations of the program.

Environmental Education Programs

The findings of this study have confirmed the connection made by the empirical literature between a socioecological experience and helping people develop an integrated sense of identity in connection with nature and community. Grilli and Curtis (2021) showed the most effective approach to environmental education was based on a whole-life transformation, not just the adoption of a new understanding or development of specific habits. Environmental education programs that desire individual and community outcomes like those demonstrated by participants in AxSol may consider the significant

themes of how students described their experiences with socioecological learning opportunities. The findings of this study show that participants emphasized the importance of culture, community, and self-identity.

Global Challenges

Organizations that want to address global issues like climate change and sustainability need to recognize the role that culture and a community of practice can play in shaping how individuals see themselves and relate to society and nature. According to Kezar (2014), long-lasting impact seemed to emerge from innovation that flowed through local and informal networks, which were sometimes supported by more formal structures. More programs like AxSol are needed to create a bridge between practitioners and community members who would like to connect to a more socioecologically integrated way of life. This study carries the potential for positive social change by providing researchers, program designers, and teachers with a deeper understanding of the process of innovative learning opportunities in an environmental education context. Rich descriptions of socioecological learning opportunities can provide a foundation for future research on the features and effectiveness of this approach to environmental education. Future program organizers may apply the unique learning context explored by this study to refine and improve the effectiveness of related educational offerings. The practical insights of this study can provide educators with additional tools and perspectives to overcome the pedagogical limitations undermining traditional environmental education efforts. Ultimately, though, a deeper understanding of innovative approaches to environmental education may improve the chances that students of all ages will be

effectively equipped to navigate the complex socioecological challenges of life in the 21st century.

Conclusion

When I began this study, my goal was to understand socioecological learning opportunities as an integrated approach to environmental education that teachers and program designers could use to prepare students to address the 21st century social and ecological challenges they face. In spite of consistent calls for innovation within the field of environmental education (Ličen et al., 2017; Rousell & Cutter-Mackenzie-Knowles, 2020), the predominant approach to environmental education remains one of information transfer (Grilli & Curtis, 2021), which has not demonstrated its effectiveness in changing behavior (Gould et al., 2019; Knapp et al., 2020) - in part because this approach reflects a broader decontextualized learning experience that tends to amplify the sense of separation between humans and nature (Affifi et al., 2017).

The literature that informed this study suggested that socioecological learning opportunities may be a critical link in forming an environmental identity or shaping how one sees themselves in terms of their relationship with the ecosystem they share with human and non-human life (Gray & Colucci-Gray, 2019; Williams & Chawla, 2016). Environmental identity was a strong predictor of pro-environmental behavior (Knapp et al., 2020; Simms, 2020), which suggested that learning opportunities with the potential to inform one's sense of environmental identity could be an effective way of reaching the goal of environmental education: a change in behavior that benefits both nature and humanity (Clark et al., 2020). However, the few empirical studies I could find on

socioecological approaches to environmental education were conducted with children and in formal learning contexts.

Although participants did not frame AxSol as an environmental education program, they provided evidence of a socioecological experience of socioecological values and practices, which inspired a more socioecologically integrated way of life. Socioecological learning opportunities informed their sense of identity in connection with nature and community. The program set aside a time and place for a community of practice to gather and participate in a culture of cultivating socioecological skills in connection with each other and with nature. Participant interactions with nature gave them a common starting point of openness and acceptance toward themselves and each other that became a core part of the culture of the community of practice. In this way, the community of practice emerged both from a deep appreciation of nature and from a strong sense of commonality as part of the human and non-human community. Altogether, the components of community, nature, and the program provided an ideal setting for individual transformation and self-discovery, leading to a more integrated socioecological way of life. As Chen observed,

> It was a big combination of nature, community, people, connection … and just sort of experiencing the energy of all of it. I don't know if you take away any one component if it would have been transformative in the same way.

References

Affifi, R., Blenkinsop, S., Humphreys, C., & Joldersma, C. W. (2017). Introduction to ecologizing philosophy of education. *Studies in Philosophy and Education, 36*(3), 229–241. https://doi.org/10.1007/s11217-017-9574-3

Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies*, *5*(2), 272–281.

Ardoin, N. M., Bowers, A. W., & Gaillard, E. (2020). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, *241*, Article 108224. https://doi.org/10.1016/j.biocon.2019.108224

Bandura, A. (1977). *Social Learning Theory*. Prentice Hall.

Besley, T., & Peters, M. A. (2020). Life and death in the Anthropocene: Educating for survival amid climate and ecosystem changes and potential civilisation collapse. *Educational Philosophy and Theory*, *52*(13), 1347-1357. https://doi.org/10.1080/00131857.2019.1684804

Borg, C., Gericke, N., Höglund, H.-O., & Bergman, E. (2014). Subject- and experience-bound differences in teachers' conceptual understanding of sustainable development. *Environmental Education Research*, *20*(4), 526–551. https://doi.org/10.1080/13504622.2013.833584

Bowers, A. W., & Creamer, E. G. (2021). A grounded theory systematic review of environmental education for secondary students in the United States.

International Research in Geographical and Environmental Education, *30*(3), 184-201. https://doi.org/10.1080/10382046.2020.1770446

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Burkholder, G., Cox, K., & Crawford, L. (2016). *The scholar-practitioner's guide to research design.* Laureate Publishing.

Ceder, S. (2019). Visions of 21st century education and evolutionary-teal – A diffractive analysis. *Conference Proceedings. The Future of Education 2019*, 3. Filodritto Editore. https://pdfs.semanticscholar.org/9736/601efe130d95637a6b63fc62e6f729dc6347.pdf

Chabay, I., Koch, L., Martinez, G., & Scholz, G. (2019). Influence of narratives of vision and identity on collective behavior change. *Sustainability, 11*(20), Article 5680. https://doi.org/10.3390/su11205680

Clark, C. R., Heimlich, J. E., Ardoin, N. M., & Braus, J. (2020). Using a Delphi study to clarify the landscape and core outcomes in environmental education. *Environmental Education Research*, *26*(3), 381–399. https://doi.org/10.1080/13504622.2020.1727859

Clayton, S. (2003). Environmental identity: A conceptual and an operational definition. In S. D. Clayton & S. Opotow (Eds.), *Identity and the natural environment: The psychological significance of nature* (pp. 45–65). MIT Press.

Cloud, J. P. (Ed.). (2017). Education for a sustainable future, benchmarks: For individual and social learning. *Journal of Sustainability Education*, 1–66. https://static1.squarespace.com/static/5825f79f59cc6805946db437/t/5c9a6b42e79 c70caf2ec1fd1/1553623878641/EfS+Benchmarks_ver1x2.pdf

Clover, D. E. (2015). Adult education for social and environmental change in contemporary public art galleries and museums in Canada, Scotland and England. *International Journal of Lifelong Education*, *34*(3), 300–315. https://doi.org/10.1080/02601370.2014.993731

Corden, A., & Sainsbury, R. (2006). *Using verbatim quotations in reporting qualitative social research: Researchers' views*. University of York.

Crutzen, P. J., & Stoermer, E. F. (2000). The "Anthropocene." *Global Change Newsletter*, *41*, 17–18. http://www.igbp.net/download/18.316f18321323470177580001401/13763830884 52/NL41.pdf

Davis, N. R., Vossoughi, S., & Smith, J. F. (2020). Learning from below: A micro-ethnographic account of children's self-determination as sociopolitical and intellectual action. *Learning, Culture and Social Interaction*, *24*, Article 100373. https://doi.org/10.1016/j.lcsi.2019.100373

Decuypere, M., Hoet, H., & Vandenabeele, J. (2019). Learning to navigate (in) the Anthropocene. *Sustainability*, *11*(2), Article 547. https://doi.org/10.3390/su11020547

Dijkstra, E. M., & Goedhart, M. J. (2012). Development and validation of the ACSI: Measuring students' science attitudes, pro-environmental behaviour, climate change attitudes and knowledge. *Environmental Education Research*, *18*(6), 733–749. https://doi.org/10.1080/13504622.2012.662213

Donaldson, T., Fore, G. A., Filippelli, G. M., & Hess, J. L. (2020). A systematic review of the literature on situated learning in the geosciences: Beyond the classroom. *International Journal of Science Education*, *42*(5), 722–743. https://doi.org/10.1080/09500693.2020.1727060

Fenton, L. (2016). *"Bushcraft" and "Indigenous Knowledge": Transformations of a concept in the modern world* [Doctoral dissertation, University of Kent]. Kent Academic Repository. https://kar.kent.ac.uk/57815/

Frank, P., & Stanszus, L. S. (2019). Transforming consumer behavior: Introducing self-inquiry-based and self-experience-based learning for building personal competencies for sustainable consumption. *Sustainability*, *11*(9), Article 2550. https://doi.org/10.3390/su11092550

Fusch, P., & Ness, L. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, *20*(9), 1408–1416. http://www.nova.edu/ssss/QR/QR20/9/fusch1.pdf

Germein, S., & Vaishnava, N. (2019). Thinking differently: An education for the Anthropocene from Uttarakhand, India. *Australian Journal of Environmental Education*, *35*(3), 250–261. https://doi.org/10.1017/aee.2019.26

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine Publishing Company.

Gómez-Olmedo, A. M., Valor, C., & Carrero, I. (2020). Mindfulness in education for sustainable development to nurture socioemotional competencies: A systematic review and meta-analysis. *Environmental Education Research*, *26*(11), 1527-1555. https://doi.org/10.1080/13504622.2020.1777264

Goralnik, L., & Nelson, M. P. (2017). Field philosophy: Environmental learning and moral development in Isle Royale National Park. *Environmental Education Research*, *23*(5), 687–707. https://doi.org/10.1080/13504622.2015.1074661

Gould, R. K., Ardoin, N. M., Thomsen, J. M., & Roth, N. W. (2019). Exploring connections between environmental learning and behavior through four everyday-life case studies. *Environmental Education Research*, *25*(3), 314–340. https://doi.org/10.1080/13504622.2018.1510903

Gray, D. S., & Colucci-Gray, L. (2019). Laying down a path in walking: Student teachers' emerging ecological identities. *Environmental Education Research*, *25*(3), 341–364. https://doi.org/10.1080/13504622.2018.1499014

Green, K. M., Crawford, B. A., Williamson, K. A., & DeWan, A. A. (2019). A meta-analysis of social marketing campaigns to improve global conservation outcomes. *Social Marketing Quarterly*, *25*(1), 69–87. https://doi.org/10.1177/1524500418824258

Grilli, G., & Curtis, J. (2021). Encouraging pro-environmental behaviours: A review of methods and approaches. *Renewable and Sustainable Energy Reviews*, *135*, Article 110039. https://doi.org/10.1016/j.rser.2020.110039

Grund, J., & Brock, A. (2020). Education for sustainable development in Germany: Not just desired but also effective for transformative action. *Sustainability*, *12*(7), Article 2838. https://doi.org/10.3390/su12072838

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, *18*(1), 59–82. https://doi.org/10.1177/1525822X05279903

Halcomb, E. J., & Davidson, P. M. (2006). Is verbatim transcription of interview data always necessary? *Applied Nursing Research*, *19*(1), 38–42. https://doi.org/10.1016/j.apnr.2005.06.001

Haugen, C. S. (2010). Adult learners and the environment in the last century: An historical analysis of environmental adult education literature. *Electronic Green Journal*, *1*(29). https://escholarship.org/uc/item/8kw8q39h#author

Haukeland, P. I., & Sidsel, S. (2020). Crafting nature, crafting self: An ecophilosophy of friluftsliv, craftmaking and sustainability. *Techne Serien - Forskning i Slöjdpedagogik Och Slöjdvetenskap*, *27*(2), 49–63. https://journals.hioa.no/index.php/techneA/article/view/3695

Humphreys, C., & Blenkinsop, S. (2017). White paper concerning philosophy of education and environment. *Studies in Philosophy and Education*, *36*(3), 243–264. https://doi.org/10.1007/s11217-017-9567-2

Humphreys, C., & Blenkinsop, S. (2018). Ecological identity, empathy, and experiential learning: A young child's explorations of a nearby river. *Australian Journal of Environmental Education, 34*(2), 143–158. https://doi.org/10.1017/aee.2018.20

Jackson, L., & Pang, M.-F. (2017). Secondary school students' views of climate change in Hong Kong. *International Research in Geographical and Environmental Education*, *26*(3), 180–192. https://doi.org/10.1080/10382046.2017.1330036

Jickling, B., Blenkinsop, S., Morse, M., & Jensen, A. (2018). Wild pedagogies: Six initial touchstones for early childhood environmental educators. *Australian Journal of Environmental Education, 34*(2), 159–171. https://doi.org/10.1017/aee.2018.19

Jorgenson, S. N., Stephens, J. C., & White, B. (2019). Environmental education in transition: A critical review of recent research on climate change and energy education. *The Journal of Environmental Education*, *50*(3), 160–171. https://doi.org/10.1080/00958964.2019.1604478

Jose, S., Patrick, P. G., & Moseley, C. (2017). Experiential learning theory: The importance of outdoor classrooms in environmental education. *International Journal of Science Education, Part B*, *7*(3), 269–284. https://doi.org/10.1080/21548455.2016.1272144

Karpudewan, M., & Mohd Ali Khan, N. S. (2017). Experiential-based climate change education: Fostering students' knowledge and motivation towards the environment. *International Research in Geographical and Environmental Education*, *26*(3), 207–222. https://doi.org/10.1080/10382046.2017.1330037

Kezar, A. (2014). Higher education change and social networks: A review of research. *Journal of Higher Education*, *85*(1), 91–125. https://doi.org/10.1353/jhe.2014.0003

Knapp, J. L., Phillips, B. B., Clements, J., Shaw, R. F., & Osborne, J. L. (2020). Socio-psychological factors, beyond knowledge, predict people's engagement in pollinator conservation. *People and Nature,* Article 00. https://doi.org/10.1002/pan3.10168

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* Prentice Hall.

Kudryavtsev, A., Stedman, R. C., & Krasny, M. E. (2012). Sense of place in environmental education. *Environmental Education Research*, *18*(2), 229–250. https://doi.org/10.1080/13504622.2011.609615

Kyburz-Graber, R. (2013). Socioecological approaches to environmental education and research. In *International Handbook of Research on Environmental Education*. Routledge. https://doi.org/10.4324/9780203813331.ch3

Kyburz-Graber, R. (2019). 50 years of environmental research from a European perspective. *The Journal of Environmental Education*, *50*(4–6), 378–385. https://doi.org/10.1080/00958964.2019.1704559

Kyburz-Graber, R., Hirsch, L., Hirsch, G., & Werner, K. (1997). A socio-ecological approach to interdisciplinary environmental education in senior high schools. *Environmental Education Research*, *3*(1), 17–28. https://doi.org/10.1080/1350462970030102

Kyburz-Graber, R., Hofer, K., & Wolfensberger, B. (2006). Studies on a socio-ecological approach to environmental education: A contribution to a critical position in the education for sustainable development discourse. *Environmental Education Research*, *12*(1), 101–114. https://doi.org/10.1080/13504620500527840

Laird, S. (2017). Learning to live in the Anthropocene: Our children and ourselves. *Studies in Philosophy and Education*, *36*(3), 265–282. https://doi.org/10.1007/s11217-017-9571-6

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Leap, B., & Thompson, D. (2018). Social solidarity, collective identity, resilient communities: Two case studies from the Rural U.S. and Uruguay. *Social Sciences, 7*(12), Article 250. https://doi.org/10.3390/socsci7120250

Ličen, N., Findeisen, D., & Bajec, J. F. (2017). Communities of practice as a methodology for grassroots innovation in sustainable adult education. *Andragoška spoznanja, 23*(1), 23–39. https://doi.org/10.4312/as.23.1.23-39

Lin, C.-I., & Li, Y.-Y. (2018). Protecting life on land and below water: Using storytelling to promote undergraduate students' attitudes toward animals. *Sustainability*, *10*(7), Article 2479. https://doi.org/10.3390/su10072479

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.

Marin, A., & Bang, M. (2018). Look it, this is how you know:" Family forest walks as a context for knowledge-building about the natural world. *Cognition and Instruction*, *36*(2), 89–118. https://doi.org/10.1080/07370008.2018.1429443

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, *11*(3), Article 8. http://www.qualitative-research.net/index.php/fqs

Meho, L. I. (2006). E-mail interviewing in qualitative research: A methodological discussion. *Journal of the American Society for Information Science and Technology*, *57*(10), 1284–1295. https://doi.org/10.1002/asi.20416

Merriam, S. B. (2002). Introduction to qualitative research. In S. B. Merriam (Ed.), *Qualitative Research in Practice* (pp. 3–16). Jossey-Bass.

Mintz, K., & Tal, T. (2018). The place of content and pedagogy in shaping sustainability learning outcomes in higher education. *Environmental Education Research*, *24*(2), 207–229. https://doi.org/10.1080/13504622.2016.1204986

Mische, P. M. (1992). Toward a pedagogy of ecological responsibility: Learning to reinhabit the earth. *Convergence*, *25*(2), 9–25.

Monroe, M. C., Plate, R. R., Oxarart, A., Bowers, A., & Chaves, W. A. (2019). Identifying effective climate change education strategies: A systematic review of the research. *Environmental Education Research*, *25*(6), 791–812. https://doi.org/10.1080/13504622.2017.1360842

Myers, M. D., & Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and Organization*, *17*(1), 2–26. https://doi.org/10.1016/j.infoandorg.2006.11.001

Nelson, J., Ahn, J. J., & Corley, E. A. (2020). Sense of place: Trends from the literature. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, *13*(2), 236–261. https://doi.org/10.1080/17549175.2020.1726799

Nielsen, T. W., & Ma, J. S. (2018). Connecting social and natural ecologies through a curriculum of giving for student wellbeing and engagement. *Australian Journal of Environmental Education, 34*(3), 215–227. https://doi.org/10.1017/aee.2018.41

Nisbet, E. K., Zelenski, J. M., & Murphy, S. A. (2009). The nature relatedness scale: Linking individuals' connection with nature to environmental concern and behavior. *Environment and Behavior*, *41*(5), 715–740. https://doi.org/10.1177/0013916508318748

Novick, G. (2008). Is there a bias against telephone interviews in qualitative research? *Research in Nursing & Health*, *31*(4), 391–398. https://doi.org/10.1002/nur.20259

Noy, S., Patrick, R., Capetola, T., & McBurnie, J. (2017). Inspiration from the classroom: A mixed method case study of interdisciplinary sustainability learning in higher education. *Australian Journal of Environmental Education*, *33*(2), 97–118. https://doi.org/10.1017/aee.2017.22

Obery, A., & Bangert, A. (2017). Exploring the influence of nature relatedness and perceived science knowledge on proenvironmental behavior. *Education Sciences*, *7*(1), 17. https://doi.org/10.3390/educsci7010017

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozialforschung/Forum: Qualitative*

Social Research, *7*(4), Article 11. https://www.qualitative-research.net/index.php/fqs

Ortlipp, M. (2008). Keeping and using reflective journals in the qualitative research process. *The Qualitative Report*, *13*(4), 695–705. https://nsuworks.nova.edu/tqr/vol13/iss4/8/

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications.

Pedersen, K. (2017). Supporting collaborative and continuing professional development in education for sustainability through a communities of practice approach. *International Journal of Sustainability in Higher Education*, *18*(5), 681–696. https://doi.org/10.1108/IJSHE-02-2016-0033

Pike, S. M. (2018). Rewilding hearts and habits in the ancestral skills movement. *Religions*, *9*(10). https://doi.org/10.3390/rel9100300

Ravitch, S. M., & Carl, N. M. (2016). *Qualitative research: Bridging the conceptual, theoretical, and methodological*. Sage Publications.

Rickinson, M. (2001). Learners and learning in environmental education: A critical review of the evidence. *Environmental Education Research*, *7*(3), 207–320. https://doi.org/10.1080/13504620120065230

Roberts, B. (2015). Education for a different world: How international education responds to change. In M. Hayden, J. Levy, & J. Thompson (Eds.), *The SAGE handbook of research in international education* (pp. 88–105). Sage Publications. https://doi.org/10.4135/9781473943506.n6

Rousell, D., & Cutter-Mackenzie-Knowles, A. (2020). A systematic review of climate

    change education: Giving children and young people a 'voice' and a 'hand' in

    redressing climate change. *Children's Geographies*, *18*(2), 191–208.

    https://doi.org/10.1080/14733285.2019.1614532

Rubin, H. J., & Rubin, I. S. (2005). *Qualitative interviewing: The art of hearing data*

    (2nd ed). Sage Publications.

Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data* (3rd

    ed.). Sage Publications.

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Sage

    Publications.

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in*

    education and the social sciences (3rd ed.). Teachers College Press.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research

    projects. *Education for Information*, *22*(2), 63–75. https://doi.org/10.3233/EFI-

    2004-22201

Simms, W. (2020). Bringing environmental identity research into the classroom context:

    Examining the theoretical foundations influencing its current use in the literature.

    Studies in Science Education, *56*(1), 35–76.

    https://doi.org/10.1080/03057267.2020.1736379

Smith, T., Holmes, G., & Paavola, J. (2020). Social underpinnings of ecological

    knowledge: Business perceptions of biodiversity as social learning. *Organization*

    & Environment, *33*(2), 175–194. https://doi.org/10.1177/1086026618803723

Stapp, W. B. (1969). The concept of environmental education. *The Journal of Environmental Education*, *1*(1), 30–31. https://doi.org/10.1080/00139254.1969.10801479

Stern, M. J., Powell, R. B., & Hill, D. (2014). Environmental education program evaluation in the new millennium: What do we measure and what have we learned? *Environmental Education Research*, *20*(5), 581–611. https://doi.org/10.1080/13504622.2013.838749

Stratford, R. (2019). Educational philosophy, ecology and the Anthropocene. *Educational Philosophy and Theory*, *51*(2), 149–152. https://doi.org/10.1080/00131857.2017.1403803

Turner, D. W. (2010). Qualitative interview design: A practical guide for novice investigators. *The Qualitative Report, 15*(3), 754–760. https://nsuworks.nova.edu/tqr/

Ulbrich, R., & Pahl-Wostl, C. (2019). The German permaculture community from a community of practice perspective. *Sustainability*, *11*(5), Article 1241. https://doi.org/10.3390/su11051241

UNESCO. (2017). *Education for sustainable development goals: Learning objectives*. United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000247444

Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes.* Harvard University Press.

Wamsler, C. (2020). Education for sustainability: Fostering a more conscious society and transformation towards sustainability. *International Journal of Sustainability in Higher Education*, *21*(1), 112–130. https://doi.org/10.1108/IJSHE-04-2019-0152

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems Thinker*, 10.

Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business School Press.

Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of Environmental Psychology*, *30*(3), 305–314. https://doi.org/10.1016/j.jenvp.2010.01.003

Williams, C. C., & Chawla, L. (2016). Environmental identity formation in nonformal environmental education programs. *Environmental Education Research*, *22*(7), 978–1001. https://doi.org/10.1080/13504622.2015.1055553

Wolff, L.-A., Skarstein, T. H., & Skarstein, F. (2020). The mission of early childhood education in the Anthropocene. *Education Sciences*, *10*(2), Article 27. https://doi.org/10.3390/educsci10020027

Yin, R. K. (2018). Case study research and applications: Design and methods (6th ed.). Sage Publications.

Appendix A: Interview Guide

Preparatory Exercise

[to be completed in the 10 minutes preceding the interview as part of audit trail]

Research
How do I feel about AxSol coming into this interview?

What bothers me or stands out to me from the previous interview?

Is there anything I want to prove or disprove?

What is unknown that I may try to probe in this interview?

Researcher
How excited am I for this interview?

Am I open to following the flow of an unstructured interview?

What are my impressions of the individual joining me for this interview?

**Remember to use vocal affirmations for phone interviews and avoid interrupting the participants flow of thought unless necessary. Forget about curiosity unless it is related to the research question.

Introductory Script

[start recording]

Hello, Thank you for agreeing to participate in this interview. Your perspective is going to be a valuable contribution to this study about student experiences of learning in the 2019 AxSol program!

Before we start, I want to remind you of a couple of things. First, everything you share will be stored securely and reported anonymously in a way that cannot be traced back to you. I am an independent student researcher, so your choice to participate in this dissertation study is voluntary and do not affect your relationship with AxSol. I will be taking notes and recording this conversation. You will have the chance to review the transcript of our conversation as well as my final reporting if you want to. You are not required to answer any of the questions and may withdraw your consent for this interview at any time. The interview should take about one hour, depending on how concisely we answer each question. My purpose in interviewing you is to understand your experience in greater depth.

Do you have any questions for me?

By granting permission to begin the interview, you consent to this interview and agree to the information in the consent form. Are you ready to begin?

[I have presented the IQs in chart format for the dissertation committee to see the context of their development and to help guide my interview process.]

		Interview Questions *Notes from Response*	**Framework** *Tone/Voice*	**Literature Review** *Personal Reaction*
		General Concerns: frame learning in terms of the influence of the learning environment on their socio-ecological identity formation/lifestyle change (NOT in terms of knowledge or behavior). Find out what aspects of socio-ecological they consciously identify in terms of the framework,		
		RQ: How do students describe their experiences of socioecological learning opportunities in a short-term, immersive, community-based environmental education program?	*Communities of Practice Authentic Context Identity Formation*	*Outcomes of EE/AEA*
1	5	*Introduction* What was your first impression of AxSol? • How did you learn about AXSOL? • How many days did you spend at the most recent program?	Communities of Practice / Network of Practice	
2	10	Was 2019 your first program? • If yes, How was it similar/different than what you expected? • If no, How was it similar/different than previous programs? • Probe: Did anything surprise you about the experience?	Authentic Context	Background Knowledge
3	13	What led you to attend the program? • What made you interested in AxSol? • Was there anything particular you hoped to learn?		Social Problem / Need for EE
4	20	Tell me about your takeaways from the experience …	Identity / group	Socioecological Identity

		membership	
	• Did your experience with AxSol influence the way you see yourself as a part of nature or human society? If so, tell me about it. • What aspects of your experience do you think were influential in this takeaway? • Did you feel like anything was missing from the experience?		
5 25	Tell me about your experience of community at AxSol … • What made you feel welcome or excluded? • Did you notice any outsiders? How did you know they were outsiders? • In what ways, if any, did you feel part of the AxSol community? • Was there a time where you felt part of / separated from the others?	Community of Practice (legitimate peripheral participation)	Social learning theory Community of Practice
6 30	Tell me about your overall experience of learning at AxSol … • Were there any moments you enjoyed or found challenging? • Where did you experience/observe learning take place at AxSol? • Did you notice anything helpful or harmful to your learning process?	Authentic context	Learning experience/process Ulbrich and Pahl-Wostl
7 35	What was a significant moment of learning for you? • What was the learning process like? • Did anything about the learning experience surprise you? Puzzle you? • What was your background with the topic? • What have you done about since?	Authentic Context (legitimate peripheral participation)	Instructional methods Boundary processes
8 45	What is your relationship like with AxSol now? • How could they continue to support your learning?	Identity Formation / Group Membership	Lifelong Learning

	• What role do you see an organization like AxSol in today's world?		
9 50	Is there anything else I should ask you about?		
10? ?	Revisit the takeaways question (#4) if there is time … now that participants have new language and memories have been activated.		

Closing Script

We have now reached the end of our interview. Thank you for spending this time with me in sharing your experiences of learning as part of the 2019 program!
Do you have any questions for me?

Next Steps: As we discussed at the beginning your answers will be confidential and any reporting will be anonymous. Please contact me or the IRB with any questions or concerns. Contact information is part of the consent form that you reviewed when we scheduled the interview. Check your email for follow-up details about you thank you gift. I will be in touch in the next few weeks with a transcript of this conversation for you to review and look forward to sharing the findings of the study.

Goodbye

Closing Reflexive Exercise

[to be completed within 10 minutes of the end of the interview]

Research
How did the interview go?

What stood out to me about the responses?

Is there anything missing that we should have talked about?

How is my impression of AXSOL changing?

What am I curious about?

Researcher
How am I feeling about the research process?

What would I change in the next interview?

Any notes for facilitation, or content to seek to understand further?

Appendix B: Table of Codes, Categories, and Themes

Themes	Categories	Codes	Number of coded instances
Role of the program			31
	Holistic immersion		16
		Camping and food	19
		Timespace for learning	17
		Geographical influence	17
	Accessibility		11
	Organizational infrastructure		25
Culture			45
	Related experiences		25
		Size (attendees)	16
	Communication (way of)		16
	Magic/spiritual		30
	Openness/acceptance		41
		Safety/trust (physical/relational)	20
Community of practice			46
	Role of the teacher		30
	Community connection opportunities		31
		Ceremony/ritual	11
		Fire as connection	23
	Learning with peers		18
		Conversations people had	14
	Open-source (collaborative, collective) experience		20
	Role of the classes (guided practice – connection),		19
		Skills - soft (relational/spiritual)	22
		Skills - hard (physical, technical, hands-on)	36
	Identity, way of life (purist)		27
	Connection with nature (find yourself in)		29
	Legitimate peripheral participation		24
		Technology (digital, tools, clothes, equipment)	14
	Children		13
	Women (specific)		8
Self			14
	Motivation to attend		16
	Mindset/attitude		24
		Comfort zone	32
		Background preparedness	21
	Be yourself		18
	Learning from the whole		23

context		
	Alone, observe, quiet, reflect	21
Learning after the program		13
Takeaways		30
Empowerment (personal response-ability		24
	Economics	14
Embodiment (physical)		25
Socioecological		22
	Indigenous knowledge	12
	Embodiment (spiritual)	11

Note. All themes and categories began as codes and were promoted to the left as it became apparent they contained other categories and/or codes. The number of coded instances represents frequency but not necessarily the emphasis or percentage of text participants devoted to a particular concept.