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Building Student Confidence: Capitalizing on Social and Emotional Skill Building in Environmental Education

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by

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TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

Introduction

Introduction

In a culture of screens, social media, risk-aversion, and helicopter parenting, our society is faced with a crisis of how to raise our children to be adequately prepared to succeed in our fast-changing world. Education is tasked with the role of helping youth learn academically, socially, and emotionally in order to prepare them adequately for being a contributing member of society. As educators, our job is to recognize the obstacles our students face and create learning opportunities and environments that allow students to grow past those obstacles.

Students and youth are struggling more than ever with self-esteem, anxiety, and building independence. This capstone seeks to address some of these challenges through the role of outdoor environmental education by answering the question: *how can environmental education best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students?*

This chapter outlines my personal journey into discovering the impact and importance that outdoor experiential learning opportunities have for students. It describes how through teaching in residential environmental education programs I came to develop an interest in supporting the growth of the whole student, not just academically, but socially and emotionally, and how impactful outdoor learning opportunities are in this realm. It then briefly discusses the impact of environmental education programs broadly. This chapter also discusses the current social and emotional challenges that students and

youth today are facing and the need for educational opportunities to bolster social and emotional learning. Finally, this chapter will summarize this chapter and the following chapters.

Building Towards a Career in Environmental Education

My passion for being and learning outdoors was probably inevitable. By the time I was six months old, I had already floated across a lake in a canoe and fallen asleep to a lullaby of frogs through the thin walls of a tent. My childhood was filled with outdoor exploration, hiding in the woods, making potions of crushed leaves and flowers, and swimming in the river. My parents solved any complaint of boredom by telling me and my brother to go play outside. While I did not appreciate having time limits on screen time as a child, as I got older I learned to thank my parents for teaching us that wonder, discovery, and joy existed outside in a way that could never be replicated on a screen.

In school, I was quite academically driven, but I struggled to take interest in my science classes. Memorization has never been my strong suit and my science classes were structured around learning to recall the names of things and processes. I had a hard time finding connection and interest in memorizing the names and functions of all the parts of a cell or the steps of mitosis and meiosis. Perhaps it was the classes I took -- biology, chemistry, physics, and anatomy and physiology -- or perhaps it was the teachers that I had, but I think the largest barrier for me was the lack of connection, experiential learning, or the ability to see, hear, touch, and connect with these concepts.

It was not until the second semester of my sophomore year of college that I took my first college science course with some trepidation. I was required to take two science

courses for my degree in environmental analysis. It was here that I discovered a passion and interest in science, especially physical sciences. I finally had a science learning environment that was hands-on, experiential, and helped me to make connections with the big picture. It wasn't that science wasn't for me, it was that the way that I had learned science in high school did not click with how I learn. After focusing my environmental analysis degree in science and society for the rest of my undergraduate, I decided to take a job in environmental education, teaching science, cultural history, and outdoor adventure for a residential environmental learning center through a fellowship program.

Observed and Documented Impact of Environmental Education

I was drawn to environmental education because of the experiential nature of the science education that happens at outdoor learning centers. I wanted to give students the opportunity to discover science in the way that I had, much earlier in their education. I moved to south-eastern Minnesota to work for Eagle Bluff Environmental Learning Center where I taught for 3 years. It was at Eagle Bluff that I first delved into different teaching styles, theories of learning, and experiential education. In a typical week, I taught eight classes to different groups of 15 to 20 students, grades 3 through 12. I taught a mixture of environmental science, cultural history, and adventure/team-building in a residential school setting where students came and stayed for 3 days.

Consistently, one of the most common observations from teachers and parent chaperones was "___ is normally never this engaged in the classroom" or "It is great to see ____ so engaged; he's normally so reserved in the classroom" or "I've never seen ___ participate this much". I began to start picking up that it was common for students who

struggle to succeed in a traditional classroom to thrive in an experiential outdoor learning environment. Clearly environmental education was filling a need for students that was not being met in a traditional classroom.

There were also moments in classes themselves that stood out. Students from the city who had never been in the woods before transitioned from uncertain to eager as they stepped outside their comfort zone and discovered new information, skills, and interests. Students who shied away from getting their boots wet at the start of class ended up breathless and laughing, covered in mud, excited about catching their first frog, fear of getting dirty -- forgotten. Students who trembled and said they could not do it finished a high ropes course with pride written on their faces, thanking us for pushing them to do something they thought they could not.

After 3 years of teaching at Eagle Bluff, I moved out to Washington to teach for the North Cascades Institute for their Mountain School Program that brings up fifth-grade students from local schools for 3-5 day residential environmental learning programs in North Cascades National Park Complex. While the structure of the program, physical location, and the students were all different from my experience teaching in Minnesota, I noticed the same trends of what impact these types of programs were having on students. Again, I noticed students getting outside their comfort zones, having a new experience, and gaining a new sense of pride and accomplishment in themselves.

At Mountain School, on the last day, we had students write postcards to themselves describing their Mountain School experiences and what they wanted to remember most about the field trip. While some students remarked about things they

learned and wanted to remember, most students wrote about a new experience they had, a new friend they made, or something they did that they thought was challenging. For example, commonly students wrote about their solo hike and how they were scared and nervous, but proud that they did it. Many remarked how they would like to go on a solo hike again. I had started my career in environmental education wanting to teach students outside so that they could find a passion for science. However, through my teaching experiences, I was learning that perhaps the greater impact of outdoor learning experiences was in the social and emotional learning, the gained confidence, the increased self-esteem, the experience of running through "the scary forest full of bears" for the first time, and discovering they could do more than they thought they could.

While my first-hand experience with teaching environmental education has shown me the impact of outdoor learning experiences, these impacts have also been extensively documented through research. Environmental education and outdoor learning opportunities have a significant positive impact on the social and emotional learning of students (Heras et al., 2020; Humberstone & Stan, 2011; Tiplady & Menter, 2021). Spending time outdoors, specifically in nature, has been shown to increase concentration and attention for both students with or without attention disorders (A. F. Taylor et al., 2001). Children who spend more time outdoors show increases in creative thinking (A. F. Taylor et al., 1998). Time in nature is associated with an increase of social and community values as well as self-growth (Weinstein et al., 2009). Simply spending more time outdoors and in nature has been shown to reduce stress and depression and to increase self-esteem, self-efficacy, overall mental health, resilience, and quality of life in

children and young adults (Kemple et al., 2016; L. Mygind et al., 2019; Tillmann et al., 2018). The outdoor learning experiences that environmental education provides enables youth to tap into avenues to grow emotionally and socially.

Growing Need for Social Emotional Learning

Now, more than ever, our youth need learning experiences that encompass social and emotional learning. Anxiety and depression have been increasing in youth since their parents' generation (Bitsko et al., 2018; Parodi et al., 2021; Twenge, 2000; Twenge & Campbell, 2001)**.** The development of social media has had significant impacts on youth mental wellbeing, especially self-esteem (Richards et al., 2015). Suicide is now the second leading cause of death for teens in the United States and has been rising every year for the last decade (Curtin, 2020). Mental health challenges have an adverse impact on the academic learning of students as well as their ability to form social connections (Reicher & Matischek-Jauk, 2019). Experiencing these mental health challenges as children increases the risk that these children will continue to face these challenges as adults (Copeland et al., 2013). As a result, our students are increasingly in need of learning opportunities that support social emotional learning to help build self-esteem, independence, and resilience. However, our risk-averse culture, in prioritizing safety, has led to children who are less independent, more sheltered, and less confident (Farmer et al., 2007; Stover, 2013).

It has never been safer to be a child in the United States. Mortality rates compiled by the United States Center for Disease Control (CDC) show significant decreases in child mortality in the past 20 years (National Center for Health Statistics, n.d.) and the

National Child and Youth Well-Being Index (2013) found large declines in all safety and risky behavior indicators since 1975, including victimization in crime, involvement in crime, and drug and alcohol use (Foundation for Child Development, 2013). According to Vincenten et al. (2005), traffic is the number one safety concern of parents for their children, despite widespread increases in pedestrian safety, yet from 1994 to 2019, the Department of Transportation recorded a decrease in pedestrian deaths of children under 14 from 280 to 181 and injuries from 15,000 to 8,000, even without adjusting for increases in population and population density (National Highway Traffic Safety Administration, 1995, 2021).

Despite significant and continued gains in child safety and risk reduction, both regulatory actions and societal practices have centered risk avoidance in relation to shaping the environment that children grow up in, what activities they engage with, how they engage with activities, and what restrictions are imposed on them (Little & Wyver, 2008)**.** Increases in population density have created less safe spaces for children to freely play and the increase of time by parents spent working has decreased the amount of time parents spend supervising or participating in play. This has resulted in a significant decrease in the amount of time children spend playing outside in recent decades (Rivkin, 1995; Vincenten et al., 2005). This has been compounded by increasing parental fears for children's safety. Parental fears, stoked by media hype, increased parenting pressure, and a market for child-safety products, have resulted in more restrictions being placed on children's independent activity, helping to build a trend of overparenting, sometimes referred to as helicopter parenting (Children's Play Council, 2002; Little & Wyver, 2008;

Skenazy, 2021). This lifestyle of safety has resulted in large amounts of children's time being spent in structured play and school and with higher engagement in technology (Pellegrini & Bjorklund, 2004)**.** In a study looking at perception of neighborhood safety and its impact on childhood obesity, researchers found that as a child's and parent's perception of neighborhood safety went down, children spent more time on screens and less time outside (Côté-Lussier et al., 2015). Helicopter parenting has been associated with children having lower levels of self-efficacy and more social challenges (Ingen et al., 2015) as children operate with less independence in their lives. While extreme risk prevention and over perception of risk operates with the intention of protecting children, it can also have the adverse effect in its inhibition of opportunities for children to learn important social, emotional, and physical skills that are important for the development of independent and confident individuals.

Children need access to educational opportunities that provide them with the opportunity to experience and learn the social, emotional, and physical skills they need to grow into healthy adults. Education has always been an environment where children learn the knowledge and skills they need to succeed in life. Environmental education plays a unique role in education, because it is centered around experiential, student-centered, outdoor learning. The learning environment that environmental education is able to provide enables students to play, learn, and try new things outdoors, presenting a ripe opportunity to capitalize on the much needed social and emotional skill building of students, such as building independence and self-confidence.

Summary

This chapter describes the development of my interest in the research question, the rationale behind why it is important to study, and the greater context that this question resides in. My love of spending time outdoors and my struggle to find a passion for science led me to a career in environmental education. Through 4 years of teaching in residential outdoor school programs, I noticed the impact that outdoor learning can have on the social and emotional learning of students, most notably building self-esteem, confidence, and independence through succeeding at new experiences outside of their comfort zones. Outdoor education has been shown through numerous studies to have a positive impact on social and emotional learning. Youth are increasingly struggling with issues of social and emotional wellbeing.

This capstone seeks to explore *how environmental education can best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students.* Chapter Two will synthesize the existing body of research around environmental education, childhood mental health, and identified approaches that strengthen social and emotional learning in youth. Chapter Three will describe the capstone project, including the process, context, and framework for developing the culminating professional development materials for environmental educators addressing how to apply approaches to building student confidence and independence within environmental education. Chapter Four will reflect on the capstone project, examining its potential impact, implications, limitations, as well as discuss how this project could be built upon or supplemented with additional works.

CHAPTER TWO

A Review of the Literature

Introduction

Even with substantial and sustained gains in child safety and risk reduction, risk avoidance has been a primary tool for shaping how children interact with the world, through both regulatory actions and societal practices (Little & Wyver, 2008)**.** While children today are exposed to less risk than previous generations, it has come at the cost of children spending time outside, engaging in independent activities, and having unstructured play time (Children's Play Council, 2002; Côté-Lussier et al., 2015; Little & Wyver, 2008; Pellegrini & Bjorklund, 2004; Rivkin, 1995; Skenazy, 2021; Vincenten et al., 2005). This chapter seeks to build a connection between risk-taking, positive mental health, and environmental education by delving into various realms of literature in order to provide context on the question: *how can environmental education best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students?*

First this chapter will provide a brief review of the literature surrounding environmental education in order to provide the lens that this capstone is being applied to. It will then provide a review of the literature surrounding childhood mental health and the connections between positive mental health and good social and emotional skills in children. Finally, this chapter will review the literature around four identified approaches to building good social and emotional skills that can be applied to the environmental education learning context.

Environmental Education

Environmental education is a process for individuals and communities to engage with environmental issues. It includes not only learning about the environment, but engaging in problem solving and action in order to gain a deeper understanding of environmental issues and develop skills towards making informed and responsible decisions (North American Association for Environmental Education, 2015; US EPA, 2012). This section will provide an overview of what environmental education is, what the goals of environmental education are, types of environmental education, and research about the benefits of student participation in environmental education, specifically. Finally, this chapter will explore experiential education as a core tenet of environmental education and the connection it holds to social and emotional learning.

Environmental Education Overview

There are conflicting opinions about where the term environmental education came from and where it first arose, but perhaps more importantly, the practice of it has been arguably occurring much longer than the word has been used. Environmental education was formalized through a coalescence of events in the 1970s, including the passage of the National Environmental Education Act of 1970 by the US Congress, the founding of the North American Association for Environmental Education in 1971, the meeting of the United Nations in 1972 in Stockholm that called for environmental education for youth and adults, and the holding of the 1977 Intergovernmental Conference on Environmental Education in Tbilisi that laid out the goals, objectives, and guiding principles to environmental education (R. L. Carter & Simmons, 2010).

Environmental education encompasses a wide range of program types and structures, with differing purposes. Environmental education programs vary widely -- after-school activities, residential learning centers, field trips, nature centers, forest/nature schools, garden programs, adventure education, and in-school curriculum are some examples of the breadth of environmental education. One of the more common approaches nationwide is the outdoor school model, in which students are brought on a field trip to a center that runs programming in nature for one or more days. This often involves staff and educators that are independent from staff of the school itself. States such as California and Oregon have mandates for all students to have the opportunity to participate in an outdoor school (California Outdoor Schools Association, 2021; Friends of Outdoor School, n.d.) and centers all over the country such as North Cascades Institute (Washington State), Eagle Bluff Environmental Learning Center (Minnesota), and Camp McDowell (Alabama) provide this sort of environmental education. These centers teach a wide variety of topics such as natural history, environmental science, team-building, adventure, and human history (Eagle Bluff Environmental Learning Center, n.d.; McDowell Environmental Center, n.d.; North Cascades Institute, n.d.). The context of this thesis will focus on environmental education programs, such as outdoor schools, that take place away from the traditional school environment, although some of the material discussed may have applications outside of this context.

Impact of Environmental Education on Students

A review of studies of the impact of environmental education programs found that environmental education not only has an impact on the environmental knowledge and

attitudes of the participants, but also improves academic achievement, increases critical thinking skills, and develops social and emotional skills most notably confidence, independence, and leadership (Ardoin et al., 2018). Environmental education and outdoor learning opportunities have a significant positive impact on the social and emotional learning of students (Heras et al., 2020; Humberstone & Stan, 2011; Tiplady & Menter, 2021). A study of UK schoolchildren found that nature-based outdoor adventure residential programs improved students' psychological wellbeing and adaptability in the face of transition by providing experiences that improved autonomy, competency, and connection with others (Slee & Allan, 2019). Spending time learning outside has a significant positive impact on students' perceptions of their social relations (E. Mygind, 2009). The location of environmental education programs is also essential to their impact. Research shows that simply spending more time outdoors and in nature reduces stress and depression and increases self-esteem, self-efficacy, overall mental health, resilience, and quality of life in children and young adults (Kemple et al., 2016; E. Mygind, 2009; L. Mygind et al., 2019; Tillmann et al., 2018). The research shows a clear positive impact of environmental education programs on student's social and emotional skills, without it being a specific goal of the programming itself. This impact has clear ties to the core of environmental education – experiential learning.

Experiential Learning and Environmental Education

Experiential learning has been utilized in practice and theory for many years. At its most basic it is learning by doing. It puts life experience at the center of the learning process (Morris, 2020) Work apprenticeships are a great example of this -- apprentices

learn a trade by working with a master in that field, doing the work in order to learn the work. It has appeared in many theories and practices around learning through time, including as a foundational tenet of environmental education. Environmental education's embrace of experiential education has had tremendous benefits for student learning, not only academic, but social and emotional learning as well.

Notably, David Kolb applied experiential learning as a core component of his learning cycle in which students go through a four-stage cycle including: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). Kolb's theory had been further clarified by researchers seeking to define what exactly a concrete experience is in the field of education. Experiential learning is one of the most prominent learning theories practiced by educators in environmental education settings (Cincera et al., 2020) and most studies on this topic focus on out-of-classroom experiences. Morris (2020) notes that this may be due to having to physically leave the classroom in order to give students novel experiences that are necessary to facilitate experiential learning. However, Morris (2020) also contends that this does not mean that experiential learning does not have a place in a traditional school environment, but that its potential may just have yet to be applied. Regardless, environmental education is uniquely placed to capitalize on the benefits and practice of experiential learning, because it is a large provider of out-of-classroom learning experiences for students.

Experiential learning involves a degree or risk and uncertainty, as learners are engaging in new, unpredictable, and often challenging experiences in which learners must

accept the challenge and unpredictability (Davidson et al., 2016; Fűz, 2018; Karoff et al., 2017; Whittington et al., 2017)**.** This type of learning can oftentimes require significant time and effort dedicated towards the experience (Coker et al., 2017). Student success and achievement, especially in the face of uncertain and challenging experiences is one of the factors that builds self-esteem. This is further bolstered by the experiential learning process being student-centered. Learners are active participants and responsible for their own learning (Fede et al., 2018; Hou & Pereira, 2017; Isaak et al., 2018). This allows for students who learn in different ways to thrive, as they are able to cater their learning experience to their needs. Students are learning based on their own direct experience or collaboratively with peers (Blair, 2016; Seaman et al., 2017). New knowledge and learning is coming from the experience of the student and the connections they are making rather than being delivered to the student from a teacher, educator, or some other arbiter of knowledge. With ownership over their own learning, students are achieving their learning, displaying to themselves and others their competence and adequacy, and practicing their independence, all foundations to building self-esteem.

Experiential learning is also largely a collaborative process (Blair, 2016; Gibbons et al., 2018; Morris, 2020). Students must learn with and from each other. This has been shown to facilitate the building of social relationships (Fifolt et al., 2018) and require support and trust between collaborators (Dorfsman & Horenczyk, 2018)**.** The emphasis on collaborative learning, allows for important social skills to be put into practice and has the potential to help the formation of a socially positive environment amongst the students.

While experiential learning has always been a foundational tenet of environmental education, its connection to social and emotional learning has not always been emphasized. Environmental education touts experiential learning because it helps kids learn better, but understanding why it has the impact that it does on students can allow environmental educators to recognize the fuller extent of its applications. The social and emotional skill development happening already in environmental education is incredibly important. Social and emotional skill development is an essential part of a balanced childhood mental health.

Childhood Mental Health - Contributing Factors

A child's mental health results from a complicated interaction of genetic, biological, psychological and environmental factors, of which the most impactful to the child's mental health is the psychological and social environment (Halpern & Figueiras, 2004). Children's early experiences are critical in the development of learning in all areas and impacts the way the brain develops (Shore, 1997). The presence of mental health challenges in early childhood often predicts later behavior and mental health challenges through adolescence. Even after resolving behavioral symptoms, researchers recognize the necessity of addressing low self-esteem as the primary goal in treating childhood mental health challenges (Dalgas-Pelish, 2006; E. J. Green & Kolos, 2010)**.**

This section will focus on outlining the broad factors that contribute to the psychological and social environment of a child including perception of risk, self-esteem, relationships and interactions with peers. It is important to acknowledge the importance of other factors such as trauma, physical ailments, socio-economic stress, parenting

styles, etc. These factors, while significant, cannot necessarily be addressed within the scope and direction of this project. Additionally, recent research in the field of positive psychology emphasizes the importance of focusing on strengthening and developing positive traits and attributes rather than focusing on addressing deficits (Berman & Davis-Berman, 2005). Thus, the focus on developing healthy risk perception, self-esteem, and peer relationships both centers positive attribute development and targets aspects that can be realistically addressed in the context of environmental education and scope of this project.

Self-Esteem

Self-esteem is what we think and how we feel about ourselves - our general evaluation of our self-worth (Myers et al., 2011; Searcy, 2007). Healthy esteem is developed from stable and well-based respect from oneself and others and is based on the desire for feelings of demonstrated adequacy, competence, independence, and achievement in oneself and recognition, importance, dignity, and appreciation from others (Maslow, 1943, 1981). Self-esteem has a significant impact on mental health, but also current and future decisions that can have significant influence on peoples' lives (Searcy, 2007; Young & Hoffmann, 2004). Having good self-esteem allows people to act and appear confident (Baumeister et al., 2005). The following sections will delve into why self-esteem matters, factors that influence self-esteem, as well as describe tactics that psychologists recommend for building self-esteem and confidence.

Self-Esteem and Why It Matters. Self-esteem has a significant impact on mental health. People with high self-esteem are not only less likely to be depressed, but are

significantly happier (Baumeister et al., 2005). Children with low self-esteem are less likely to take risks and may not be as willing to participate in activities outside their comfort zone. Low self-esteem is associated with social, physical, and mental health challenges (Victoira et al., 2021; Young & Hoffmann, 2004). Self-esteem can impact life altering influences such as involvement in domestic violence as a perpetrator or victim (Hendy et al., 2003), career choice and carrying a steady job (Kunz & Kalil, 1999), and suicide (Turner et al., 2002)**.** Low self-esteem is linked to poor performance and school achievement, anxiety, eating disorders, teen pregnancy, and bullying (Baumeister et al., 2005; D'Amico & Cardaci, 2003; Ollendick et al., 2008; Rigby & Cox, 1996; Vernon et al., 1983). Additionally, those with higher self-esteem are more likely to participate in positive health practices such as exercise, nutrition, relaxation, safety, and reduction of substance abuse (Yarcheski et al., 2003). The significant impact that self-esteem has on a person signifies the importance of building healthy self-esteem from an early age.

Building Self-Esteem. Self-esteem development is a complex and critical stage of emotional development for early school-aged children. A significant period in the development of self-esteem comes during elementary school in which children are engaging with academics and extracurricular activities, building peer relationships, and navigating familial relationships (E. J. Green & Kolos, 2010). Searcy (2007) proposes that self-esteem is developed through association with groups such as family, organizations, friends, peers, and social groups, known as *associative self-esteem*; participation in activities, skill mastery, and achievement, known as *activity-based self-esteem*; and what is heard about oneself, known as *aural self-esteem*. All three of

these modes are heavily intertwined with social skills, which will be discussed more thoroughly in the next section.

Activity-Based Self-Esteem. *Activity-based self-esteem* is developed through activity participation. Researchers have found that self-esteem is bolstered by success and good performance (Baumeister et al., 2003), but participation in the activity itself bolsters self-esteem, in addition to the outcome (Dalgas-Pelish, 2006; Searcy, 2007). Achievement and skill-mastery generate self-esteem (Baumeister et al., 2003, 2005; Maslow, 1943, 1981; Searcy, 2007), but so do feelings of competency, adequacy, independence, pride, and the possibility of appreciation by others that simply participating in an activity can produce (Larouche et al., 2008; Maslow, 1943, 1981; Searcy, 2007). Searcy (2007) asserts that activities that have tangible outcomes have the potential to be appreciated by others, and activities that are seen as having responsibility are ideal candidates for boosting self-esteem. The prospect of failing an activity and taking a hit to self-esteem can cause youth to quit or choose not to participate. Not engaging in an activity does not raise self-esteem, but it does not necessarily lower it either (Bos et al., 2006; Searcy, 2007). This is an area where outside influences can have an impact on helping to create environments to improve self-esteem. Positive reinforcement and support can serve as a bridge to help youth persevere and take reward in participation, improvement, or the more long-term prospect of success (Bos et al., 2006; Searcy, 2007). The type of activity or level of skill-mastery does have an impact on the gain of self-esteem. Activities and skills that have a high social value produce a higher positive impact on self-esteem (Searcy, 2007). For example, participating in a

band requires a high level of skill-mastery and is of high social value and would have a much larger boost to self-esteem than collecting coins, which does not require much skill-mastery or have a significant social value. Even typical activities, such as play, have been shown to have positive impacts on self-esteem. Play is used as a therapeutic technique for developing self-esteem in elementary aged children because of play's ability to encourage responsibility, promote independence, and set limits (E. J. Green & Kolos, 2010). Activity-based self-esteem has the most potential for youth programmatic applications. Searcy (2007) suggests that offering a wide range of activities, so that students find something that they are motivated to participate in and are talented at. This allows students to not only find success in something, but also participate in something they are willing to accept the risk of failure in order to try. Additionally, activities that focus on task mastery and skill development are effective in supporting self-esteem growth as they contain tangible and reachable goals.

Aural Self-Esteem. *Aural self-esteem* is built by what youth externally hear from others about themselves, especially by those who are respected or significant to the individual. Adequacy, competence, independence, achievement, importance, and dignity when recognized and appreciated by others serve to build self-esteem (Maslow, 1943, 1981). The self-esteem is garnered because the people they value in turn value them (Searcy, 2007). This is further supported in social learning theory, in which human beings attach value to things that are valued by others (Bandura, 1977). This can be verbally communicated, but also communicated through actions and behavior that show to the individual that they are valued, although verbal communication is the most direct (Searcy,

2007). Negative statements and feedback, especially from valued people, such as teachers, family, and peers can have just as large of a significance in deflating and stifling self-esteem (Bohanek et al., 2008; E. J. Green & Kolos, 2010; Searcy, 2007). This facet of generating self-esteem is reflected in the field of positive psychology which emphasizes the importance of focusing on positive traits in a person, rather than focusing on addressing deficiencies (Berman & Davis-Berman, 2005). In practice, this can be as simple as making sure to verbalize appreciation, value, and when you recognize an achievement. When criticism must be given, focusing the criticism on addressing peoples' actions rather than the person themselves ensures that it is clear that the action is something undesirable, not the person (E. J. Green & Kolos, 2010; Searcy, 2007). In a study looking at the development of self-esteem in an urban school, researchers found that teacher behaviors such as setting high expectations, providing encouragement, and giving praise had a significant impact of helping to build student self-esteem (Akin & Radford, 2018).

Associative Self-Esteem. *Associative self-esteem* is derived from formal associations such as organizations or clubs and informal associations such as family and peer groups. Membership in an organization allows youth to gain self-esteem through the achievements and status of the organization. The status and achievements of the organization reflect onto the individual by association (Searcy, 2007)**.** The feelings of demonstrated adequacy, competence, achievement, recognition, importance, and dignity that help to build self-esteem can be garnered through association (Maslow, 1943, 1981). For example, being a member of a sports team has an impact on the self-esteem of all of

the team-members. The status and achievement of the sports team impacts how the individual member sees themselves and how others see them (also having an impact on the individual's self-esteem). This same association with the status of membership extends to family, religions, and social cliques. Peer association is an incredibly influential factor in associative self-esteem for youth. Being a member of the 'in' or the 'out' crowd carries a lot of weight in adolescent self-esteem, either in maintenance or building of self-esteem. It is a large motivating factor for youth to signal they carry membership to the 'in' or the 'out' crowd with clothing, mannerisms, and participation in activities (Searcy, 2007). It is not to say that youth must be involved in a specific social group to have self-esteem, more that they must view themselves as a member of a group that they desire to be a part of. Self-esteem is not likely to be gained in instances in which the individual feels rejected (Searcy, 2007). The building of social competence that helps to allow youth to gain entry and acceptance to social groups will be covered more in depth in the following section on social relationships.

Social Relationships

Social relationships also have a significant impact on a child's self-esteem, both in the association with social groups and what they hear about themselves from others (Searcy, 2007). The need to belong is foundational to children's emotional growth and acceptance of themselves (E. J. Green & Kolos, 2010; Maslow, 1981). Having healthy social relationships has long been shown to have a positive relationship with overall well-being. Research has shown that social relationships can be protective against mental health challenges and supportive for helping to cope with mental health challenges, but

unhealthy social relationships can be damaging to mental health (G. Green et al., 2002). This section will outline how social relationships interplay with mental health and the importance of developing good social skills in children so they can foster healthy social relationships.

Having healthy and supportive social relationships are crucial to the building of self-esteem (E. J. Green & Kolos, 2010; G. Green et al., 2002; Maslow, 1943; Searcy, 2007)**.** However many of the building blocks of self-esteem are also essential for the development of social relationships. Children are more likely to experience success in finding positive peer relationships when they have a sense of acceptance at home, feel confident in their abilities, and value their own autonomy (Bednar & Peterson, 1995)**.** Rejection from peers often leads to children having difficulty building positive self-esteem and developing social skills (Margolin, 2007).

Social support from peers in elementary school often serves as the first meaningful social relationship in which a child feels acceptance from someone other than a teacher or family member (E. J. Green & Kolos, 2010). Children look to their peers not only for support but also for reinforcement and affirmation of their successes by observing reactions in their peers (Berndt, 2002; Margolin, 2007). It is through these social interactions and navigating peer relationships that children develop social skills, such as perspective taking, listening, and communication skills. Developing these skills allows them to feel competent in social situations (Berndt, 2002; E.J. Green & Kolos, 2007). The ability to build a healthy social support system can help build confidence and

self-esteem, but it also interacts with other factors such as risk perception to form a more complete picture of what makes up mental health in youth.

Perception of Risk

Perception of risk is the individual's interpretation of the likelihood and immediacy of danger (Sandseter, 2009). The ability to perceive risk accurately is a skill that is developed in childhood as children experience risky, uncertain, and challenging situations that help them to not only develop the skills to assess risk, but also to manage these situations in healthy ways (Knight, 2011; Moyles, 2012; Schweizer, 2009). This section will delve briefly into the literature on risk and risk perception and its interaction with mental health.

Risk and Risk Perception. Risk is defined as "exposure to mischance or peril" (Adams, 1995, p. 26). Risk can come in many forms, with broad categories of physical, social, and economic risk. These categories can be broken down into a number of smaller sub-categories as well. Risk is everywhere and is an essential and unavoidable part of life. A zero-risk life is not achievable, nor is it desirable (Adams, 1995).

Risk is typically broken down into two, interrelated, types: objective and subjective (perceived). Sandseter (2009) defines objective risk as the "description of the factors that constitute a potential risk in the situation both influenced by external hazards and by the child's subjective risk perception and risk-taking behaviour" (p. 3). Perceived risk is the conclusions that the individual draws about how imminent the danger is and the likelihood for it to happen (Sandseter, 2009). An individual's actions, based on their

perception of risk, influences the objective risk of a situation (Adams, 1995; Sandseter, 2009).

Adams (1995) argues that trying to broadly quantify risk in formal risk assessment and literature fails to acknowledge how subjective and relative risk is in any circumstance. It ignores an individual's situation, strengths, knowledge, biology, experiences, and perception of the risk. He argues that while objective risk exists, that it is impossible to measure. The very act of measuring risk is shown to have an impact on people's decisions (Adams, 1995). Because of the subjective nature of risk, how people and society perceive risk can vary greatly and can have larger implications for behavior and mental health.

Risk Perception and Mental Health. Heightened risk perception changes children's behavior. Côté-Lussier et al. (2015) found that children who perceive high levels of risk in their neighborhood spend less time playing outside and more time engaging with screens. Spending time outside has been linked to positive social, emotional, and physical health, while increased screen time has been linked with the opposite. Mental health has a significant impact on a person's perception of risk. Extensive research has documented that anxiety is associated with risk averse behavior (except for health-related risks such as drugs and alcohol) and with substantially increased risk perception (Hofmann & DiBartolo, 2014; Lorian & Grisham, 2010, 2011; Maner et al., 2007; Maner & Schmidt, 2006; Pailing & Reniers, 2018; Reniers et al., 2016). Because anxiety is associated with cognitions of dangers, anxious youth overestimate subjective personal risk, although anxiety had no correlation with

perception of risk for others (Butler & Mathews, 1983; Muris & van der Heiden, 2006). Anxious individuals have a heightened perception of risk that prevents them from engaging in potentially risky tasks or activities when compared to non-anxious individuals (Pailing & Reniers, 2018)**.** Furthermore heightened risk perception has a direct relationship with behavioral inhibition, in which children withdraw from new situations or people, often showing distress or nervousness (Reniers et al., 2016).

Anxiety and risk perception are intricately linked and have real consequences in other aspects of children's lives such as social participation, engagement with activities, and consequently their self-esteem. Fear and heightened risk perception can manifest as anxiety in a self-perpetuating cycle without the proper tools and support. A child's mental health is built by numerous complex and interrelated concepts - three of which (self-esteem, social relationship, and risk perception) are outlined in summary here. While good skills in these areas do not guarantee a child's health and success, bolstering healthy self-esteem, social relationship, and risk perception with social and emotional skills can help give children the tools they need to build confidence and independence. The following section will outline some selected approaches to building social and emotional skills that are specific to educational settings and most applicable to the environmental education field.

Approaches to Building Social and Emotional Skills

While there are many approaches to building social and emotional skills in young people, I have selected a handful of these approaches that could be applied in environmental education. A number of these approaches are already utilized to some

extent within environmental education programs. Using these approaches explicitly for the purpose of building social and emotional skills within environmental education programs has the potential to capitalize on the strengths and benefits that these programs have already shown. Additionally, understanding what aspects of environmental education programs benefit the growth of students' social and emotional skills can help us to improve and expand on the delivery of the approaches that have the greatest impact, not only in environmental education, but in all fields of education and youth programs. This section will outline Social Emotional Learning (SEL), Maslow's Hierarchy of Needs, Risky Play, and Adventure Education as explicit approaches that can build social and emotional skills in students participating in environmental education programs.

Social Emotional Learning (SEL)

The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines SEL as:

> the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions. (CASEL, 2020, p. 1).

This section will describe the origin, goals, methods, and applications of SEL.

It is important to distinguish between SEL and social and emotional skills -- SEL is one approach to learning social and emotional skills compiled by the organization CASEL. Other approaches may draw on SEL's framework, share aspects of the approach,

and use the language social emotional learning or social and emotional learning. When referring to CASEL's SEL, this paper will only use the acronym, SEL. Other similar uses of language such as social and emotional skills, social and emotional education, learning social skills, etc. do not refer to the specific approach of SEL outlined by CASEL. While there are many schools and organizations teaching social and emotional learning, only some are using the specific framework outlined by CASEL. SEL is a prevalent and well-known framework, with lots of resources available and thus will be the framework for formal social and emotional learning that is outlined as an approach in this paper.

CASEL and SEL: A Brief Background. CASEL was formed by a group of researchers, educators, practitioners, and child advocates in 1994 with the goal of building social and emotional skills in school. It grew out of work being done in a few schools across the nation by a small number of educators and researchers towards educating the whole child and focusing on social development (CASEL, n.d.). It was from this group in 1994 that the term SEL was created to describe the approach that CASEL takes towards teaching and promoting the teaching of social and emotional skills. Since then, SEL has been incorporated into schools across the country (CASEL, n.d.).

All 50 states have incorporated SEL standards into preschool, and many also have SEL in K-12 standards as well. SEL practices have been incorporated in classrooms for students with disabilities and in international classrooms (Khazanchi et al., 2021). Its wide incorporation has allowed for numerous research opportunities to explore the approach. In an analysis of 82 SEL interventions, SEL programs in schools were shown to have a long-term positive impact on prosocial behavior, positive attitudes, and

academic achievement as well as serve as a protective factor against issues such as conduct problems, substance abuse, and emotional distress. This positive impact was consistent across students populations of differing socioeconomic status, of differing racial and ethnic make-up, and foreign or domestic school locations (R. D. Taylor et al., 2017).

The Foundations of SEL. The SEL framework is centered around five interrelated competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. These competencies are taught or supported within four tiers of settings: classrooms, schools, families, and communities.

Core Competencies. The core competencies are at the center of the SEL framework wheel (Figure 1). According to CASEL (2020), self-awareness is defined as "the abilities to understand one's own emotions, thoughts, and values and how they influence behavior across contexts" (p. 2). This covers emotional skills such as recognizing strengths and weaknesses, developing confidence and purpose, and experiencing self-efficacy. Emotional skills are also involved in the self-management competency which encompasses "the abilities to manage one's emotions, thoughts, and behaviors effectively in different situations and to achieve goals and aspirations" (CASEL, 2020, p. 2). Skills taught through the self-management competency include managing stress and other emotions, setting and motivating oneself towards goals, and practicing self-discipline. CASEL's core competencies also address social skills through social awareness: "the abilities to understand the perspectives of and empathize with others, including those from diverse backgrounds, cultures, and contexts" (p. 2) and

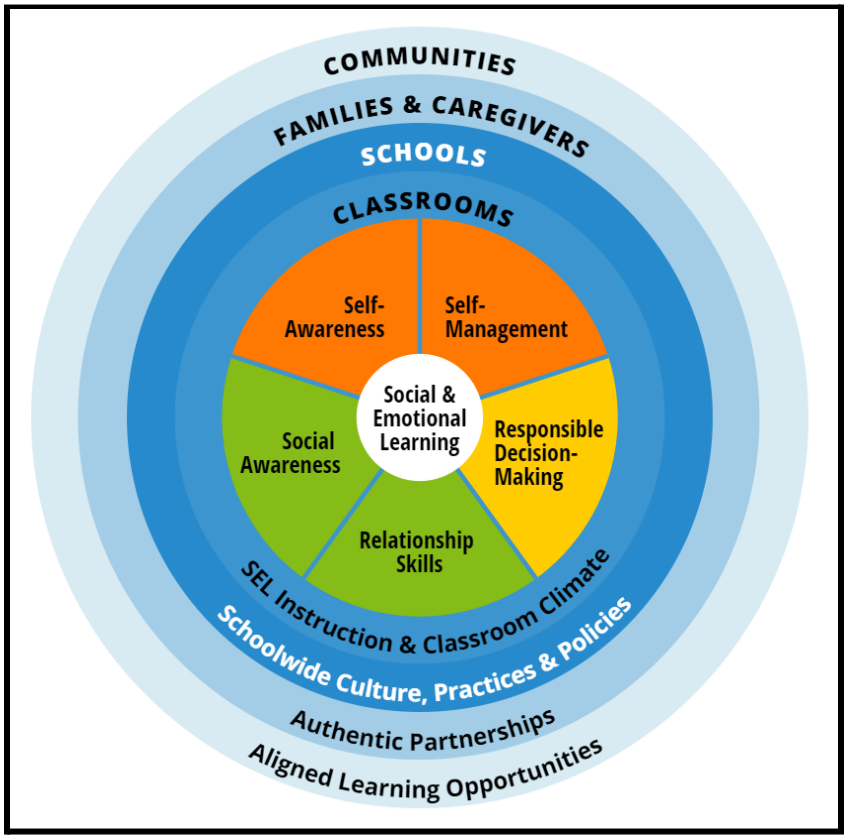
relationship skills: “the abilities to establish and maintain healthy and supportive relationships and to effectively navigate settings with diverse individuals and groups” (p. 2). These social skills include identifying social norms in different settings, communicating with and listening to others, collaborating effectively, developing positive relationships, resolving conflict, showing leadership, and seeking help when needed. Responsible decision making, the final core competency that CASEL identifies, falls at the intersection of social and emotional skills and is defined as “the abilities to make caring and constructive choices about personal behavior and social interactions across diverse situations” (p. 2). This includes skills such as practicing reasoned judgment, anticipating consequences, and considering the impact of ones’ choices on personal, social and collective wellbeing (CASEL, 2020). These five competencies can be applied in numerous settings that are part of a child’s education.

Settings. The SEL framework lists four settings in which SEL can be integrated in order to have a coordinated and consistent approach to learning social and emotional skills. Classrooms can incorporate SEL through a variety of approaches including explicit instruction on competencies with focused lessons, using teaching practices that allow students to apply and practice these skills, and integrating SEL into other academic curriculum (CASEL, 2020). CASEL proposes that schoolwide, SEL can be supported by creating a positive and healthy school environment and culture in which students, staff, and faculty feel supported, respected, and actively engaged. CASEL also emphasizes the importance of authentic partnerships between families and schools in which families are included in school decision making and feel that they share the norms and values of the

school. Engaging families in SEL allows students to have a consistent engagement with SEL at school and at home (CASEL, 2020). Lastly, community partners provide additional support and services to students outside of school. From youth groups to sports teams, these community partners offer opportunities for students to practice social and emotional skills and can support SEL by using common language and strategies that students are familiar with from school (CASEL, 2020). While all four of these settings can be utilized for consistency across learning environments, SEL's application into even one of these settings can still be useful.

Figure 1

SEL Framework Wheel



Note. From (CASEL, 2020).

SEL Application. SEL can be taught explicitly, using formal lesson plans that teach specifically to one or more of the competencies outlined in SEL, or it is taught indirectly through integrating SEL concepts into existing curriculum or programs to foster the development of the competencies (CASEL, 2015)**.** Indirectly incorporating SEL encompasses a broader approach and has been applied to school-wide programs that involve tactics such as: increasing the support and focus on relationship building between students, staff, and teachers and building positive school-wide norms around respect (Thapa et al., 2013); training teachers on classroom management and emotionally supportive teaching practices (L. Dusenbury et al., 2015a); increasing school community by decreasing class sizes, establishing fair behavior management systems such as restorative discipline, and ensuring effective teaching practices (L. Dusenbury et al., 2015b). While research on SEL incorporation into traditional classrooms and schools is abundant, there is a lack of research on incorporation into an environmental education setting, although some groups and environmental education organizations have been working to incorporate SEL practices into existing environmental education curricula (BEETLES, 2020; Grow Outside, n.d.).

While incorporation of SEL practices into environmental education is new, these programs have long taught activities, such as team-building and challenge courses, that have learning goals that fall within the competencies of SEL. Additionally, environmental education has focused on building social and emotional skills in students (D. Carter, 2016), so applying specific aspects of SEL is within familiar territory. An indirect SEL approach of fostering a positive learning environment for social and emotional skills is

likely easier to integrate and more compatible for most environmental education programs, as many of these programs only have students for short periods of time with other learning goals in place already. Environmental education programs fit within the school and community settings of the SEL framework as these programs can be conducted both with school partnerships during school hours or as activities run by organizations within the community.

SEL is especially useful to environmental education because of its continuity with school systems where children may have already been exposed to the system and existing standards within those schools that may help strengthen the relationship between the environmental education programming and the school curriculum. SEL is likely to be known to classroom teachers and has the ability to provide for more collaboration and connectivity between an environmental education experience and the classroom. Additionally, the established, researched, and formal framework provides a lot of resources that are already built for a learning environment and can be easily adapted to meet the unique circumstances and programs of environmental education.

Maslow's Hierarchy of Needs

In 1943, Abraham Maslow first published his theory on the Hierarchy of Needs. He proposes that humans are motivated by a hierarchy of needs and that the most basic of needs must be met in order for people to be motivated towards higher levels of learning (Maslow, 1943). The application of Maslow's Hierarchy of Needs as a theory has been scrutinized in multiple research studies, however most of these studies have focused on its successes in the workplace (Fisher & Royster, 2016; Liu & Wu, 2015; Weller, 1982).

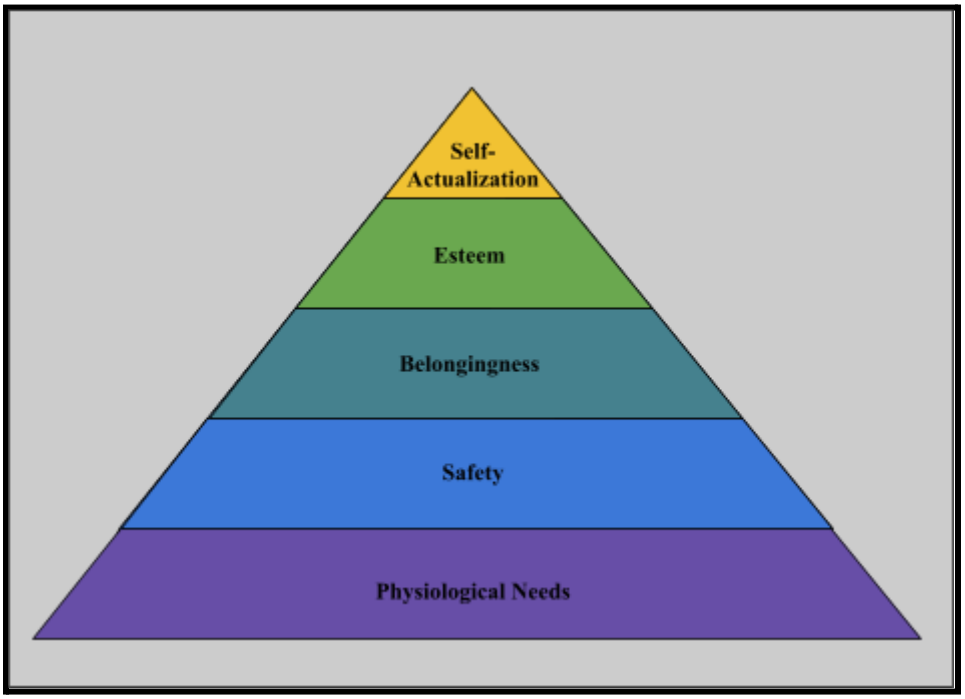
In a 2020 case study, Fisher and Royster found that the application of Maslow's Hierarchy of Needs, at an at-risk rural elementary school, had significant positive impacts on the academic performance of the school, moving from the lowest ten percent of schools in the state to the 90th percentile in the span of 7 years. Additionally, Brookman's (1989) study looking at how the application of Maslow's Hierarchy of Needs in colleges, found that interventions by student affairs and faculty members, based in Maslow's Hierarchy of Needs, improved student retention in a college setting. This section will examine what Maslow's theory is, how it has been applied in schools, and how it could be applied to environmental education.

Maslow's Theory. Maslow's theory organizes human motivation into a hierarchy of five distinct motives: *physiological*, *safety*, *belongingness*, *esteem*, and *self-actualization* (Maslow, 1943, 1981). Maslow (1981) explains that *physiological* needs refer to basic homeostasis needs such as food, water, warmth, and sleep. In his theory, *safety* needs could include physical safety, but also stability, dependency, structure, and freedom from fear. *Belongingness* refers to the need for social connection, love and affection with others, through friendships, family, and other social circles. He defines *esteem* as the need for a stable and well-based respect from oneself and others. Further notes on esteem are expanded upon in much greater depth in the section on childhood mental health. Finally, *self-actualization* refers to less specific needs such as personal growth and discovery (Maslow, 1981). Critiques of Maslow have expanded and redefined self-actualization to include other developmental priorities such as mate acquisition and parenting, and propose that self-actualization may look different to

different people (Kenrick et al., 2010), while its application in education has defined it as when the best student learning and success occurs (Fisher & Crawford, 2020; Katja & Katarina, 2013).

Figure 2

Maslow's Hierarchy of Needs



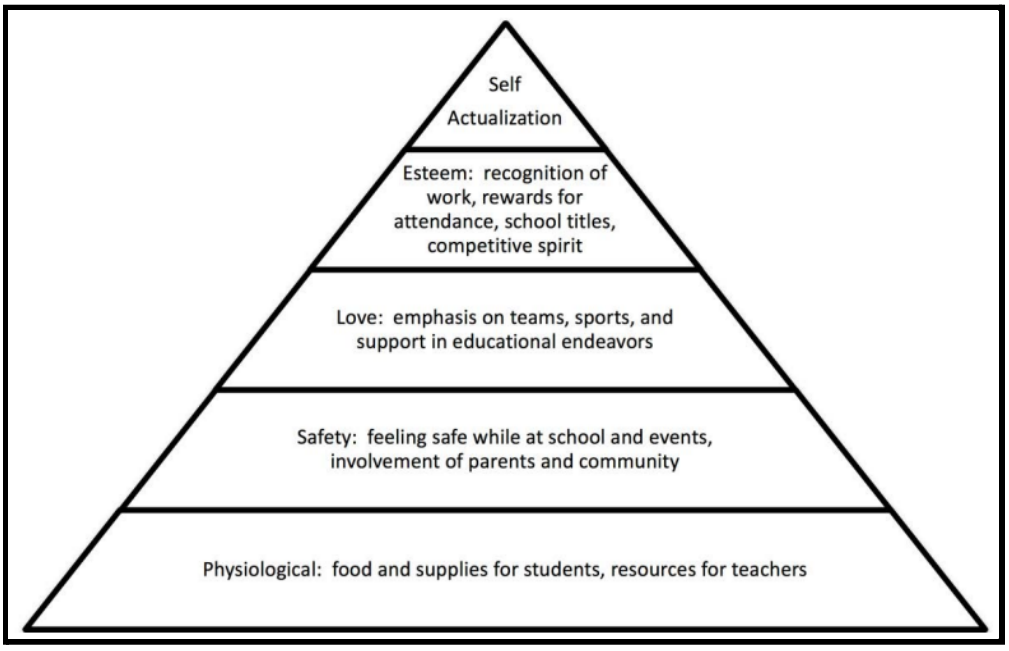
Note. Compiled from Maslow (1943).

The hierarchy of needs, as seen in Figure 2, implies that some motives take cognitive and developmental priority over others. Developmentally, we learn to feed ourselves before we learn to run away from threats or seek acceptance into social groups. More relevant to the teaching and learning process, however, is the cognitive priority the hierarchy shows. The first level must be satisfied before focus can turn to subsequent levels. If we are starving, without a place to live, and alone, our minds are preoccupied

entirely with finding food. It is only after our hunger is satisfied that we are able to concern ourselves with the next level of human motivation (Maslow, 1943, 1981). To apply this to a more education specific example: in order for a student to be motivated to satisfy their curiosity about what makes lichen different from moss, they must first have basic needs such as hunger, warmth and safety met. A hungry and cold student is going to find it difficult to focus on learning. Fisher and Crawford (2020) used the results of their case study to develop a modified hierarchy specific to schools (Figure 3). Their figure refers to belongingness with the term "love". For the sake of consistency, this paper will continue to use the term belongingness as it is what was originally outlined by Maslow (1943, 1981).

Figure 3

Maslow's Hierarchy to Support Struggling Schools



Note. From (Fisher and Crawford, 2020, p. 13).

Hierarchy of Needs Application. While there has not been specific research that looks at Maslow's Hierarchy of Needs in relation to environmental education, programs can draw on the application of Maslow's theory in schools as a framework for environmental education programs. Fisher and Crawford (2020) found that by addressing different levels of the hierarchy in an at-risk school helped create a better school community and had a significant impact on student success and learning. There are many aspects of environmental education programs that might impact levels of the hierarchy and by addressing those facets, it may have similar impacts as was seen in Fisher and Crawford's (2020) study of the impact of applying Maslow's hierarchy to schools. Environmental education instructor resources developed by BEETLES, an environmental education project developed by University of California Berkeley's Lawrence Hall of Science, describe addressing student basic needs such as social attention, emotional safety, and physical comfort (BEETLES, n.d.). While the terminology differs slightly, focusing on social, emotional, and physical needs of students encompasses the first three tiers of Maslow's hierarchy: physiological needs, safety, and belongingness. Programs that are held away from students' school and with new instructors may have the potential to challenge student perception of belongingness and safety, given the unfamiliar environment and community. Building relationships with students early in a program can help children feel seen and connected and giving students a schedule can help them know what is going to happen and when in a new structure (BEETLES, n.d.). Additionally, outdoor programs are susceptible to a number of environmental conditions that students may or may not be prepared for, resulting in impacts to the physiological needs tier, such

as being cold, muddy, or wet. BEETLES (n.d.) encourages checking-in on how students are doing with hunger, thirst, and temperature often in order to help students stay focused by addressing their physical needs. In order to deliver programs that may be able to better address the esteem tier of the hierarchy, the structure of the program and focus of the instructor could focus on first fulfilling the physiological, safety, and belongingness needs of the students.

Maslow's hierarchy of needs provides a useful lens to look at the structure of programming as well as how we approach teaching. While the hierarchy of needs does not provide specific curriculum changes or a focused learning framework, it does provide conceptual grounds for basing instructor training, teaching techniques, behavior management practices, and program structure.

Risky Play

Risky play is "thrilling and exciting play that can include the possibility of physical injury" (p. 6425) in which the risk is a challenge or situation that the child is able to evaluate, separating it from dangerous play in which a child is not able to appropriately evaluate the situation (Brussoni et al., 2015). In their conceptual model, Dodd and Lester (2021) argue that by engaging in adventurous activities that expose children to physiological arousal, fear, and uncertainty, children learn to cope with natural stress response in a healthy way, providing a buffer to heightened and clinical anxiety. Engaging in risky play and risk-taking supports children's overall wellbeing, including their social and emotional health (Coe, 2017). This section will specifically touch on

what risky play is and the impact it has on children. It will cover examples of what risky play is and how it has or could be incorporated into learning settings.

Risky play involves a voluntary experience that pushes the physical and mental limitations of the child, often by engaging in a new experience (Stephenson, 2003). To the child, there is a perceived uncertainty as to the outcome of the experience (Little, 2006). Risky play has been categorized into several categories: play at heights, play with speed, play with potentially harmful tools, play near dangerous elements, physically rough play, and play where children can get lost (Sandseter, 2007)**.**

Why Risky Play? Challenge and risk, especially during outdoor play, allows children to learn new skills, try new behaviors, and test the limits of their physical, social, and mental development (Little & Wyver, 2008). Risk-taking experiences and physical challenges have a documented impact on the physical development of children, including coordination, physical control, motor development (Fjørtoft, 2001; Schweizer, 2009). Organized sports are a great example of this that have long focused on the physical benefits of physical challenge and risk-taking. Physical achievement and self-efficacy that comes with participation and success in these activities can help to grow healthy self-esteem in youth.

Besides the physical benefit and indirect emotional benefit, risk-taking has a multitude of other benefits to the development of children, including direct social and emotional benefits. Learning to manage risk helps children to approach risky and uncertain circumstances in the future with the development of decision-making skills, problem solving, and perseverance (Knight, 2011; Moyles, 2012; Schweizer, 2009)**.**

Additionally, dealing with challenging situations and managing risk successfully helps children to overcome fears and anxiety while helping to build a realistic picture of risk and safety (Moyles, 2012). Dealing with challenge and risk also helps to build self-efficacy (Moyles, 2012) and independence in children (Malone, 2001), helping to build a positive self-image.

Some have challenged the support of risky play on the grounds of safety because of the potential for injury (Botsoglou et al., 2011; US Consumer Product Safety Commission, 2008; Zeece & Graul, 1993), but there has been major pushback from researchers who argue that overly focusing on avoiding injury and over-regulating children's play constrains the ability of children to develop physically, socially, and mentally which could have lifelong implications for the well-being of that child (Little & Wyver, 2008; Malone, 2001; Sandseter, 2009). According to Adams (1995), in his book *Risk,* safety literature and research universally ignore the benefit to undertaking the risky action. Little and Wyver (2008) argue that the goal should be to manage risk, not to eliminate it entirely. Risky play has clear benefits to the confidence and independence of children and plays an important developmental role in the life of everyone.

Risky Play Application. Risky play has been integrated into environmental education formally through nature preschools and forest kindergartens (Coe, 2017; Knight, 2011; Tiplady & Menter, 2021), yet it exists in many environmental education programs, although it may not be an intentionally integrated educational tool. For example, environmental education programs that engage with the use of potentially harmful tools, such as flint and steel to start a fire, chemicals to test water quality, a rock

hammer to search for fossils or identify rocks, or a bow and arrow to practice archery are engaging in risky play according to the categories of risky play laid out by Sandseter (2007). Environmental education programs can have many activities that fit into the categories laid out by Sandseter (2007) including play at high speeds (such as activities in which students run) and exposure to dangerous elements (inclement weather, poisonous plants, stinging insects, areas where students can get lost). Some activities or programs may incorporate this more than others. For instance, students using a map and compass to navigate through the woods or exploration in the forest can have a heightened perception of the risk of getting lost than a program in a fenced garden or activity on a play field.

Environmental education programs can use the concept of risky play to identify aspects of programming that already fall within this to enhance the learning experience in these activities by providing opportunities for students to reflect. Adventure education is an area that is closely tied to risky play and will be discussed in detail in the following section. Additionally, risky play can be used as a lens when building new curricula or making changes to current curricula in order to ensure that opportunities for this sort of learning are incorporated. This is not to say that the actual risk involved in an activity needs to be increased, but rather that the elimination of all risk or perception of risk should not be the goal. Some level of risk and perceived risk is okay, but must be moderated by educators to ensure that these risks can be taken safely. For example, in a free exploration of the forest, have students pair up (so they are not alone), give clear physical boundaries to the exploration (to mitigate students wandering too far), show students a specific place to meet at the conclusion of the activity, and communicate a

specific time or signal so students know when they need to be at the meeting place. Additionally, giving students the resources to approach the risk and the agency to voluntarily engage with it are important so that students do not perceive they are being put at needless risk. For example, in an orienteering activity, show students where they can find an instructor or other adult if they need help, give them the tools they need (map, compass, emergency whistle) and the knowledge of how to use them. Giving students the option to choose different levels of difficulty can help build confidence in their ability as well as ensure they feel they are given an appropriate level of task. Risk tolerance and perception of risk can vary widely amongst students and student groups (Berman & Davis-Berman, 2005) and instructors should be sure to cater risky play activities to the level of the students.

Risky play appears in many forms already within environmental education and its further embrace can capitalize on the benefits that children receive from it. Its application can be tricky, however, especially in a litigious and risk-averse culture. Yet with careful consideration and using scalable models formalized in nature preschools and forest kindergartens, risky play can be capitalized further within environmental education. It holds an inherent connection to adventure education, long a core subject of environmental education, and the topic of the following section.

Adventure Education

Adventure education is a part of environmental and outdoor education that focuses on the development of outdoor skills, outdoor activities, and team-building. Activities in this realm generally may not involve academic learning as their primary

focus, although they may have components and learning goals related to academic learning such as math, science, or human history. Instead, adventure education has primary learning goals more associated with learning skills, team-building, physical education, and building connection to the outdoors. Common examples of adventure education include hiking, ropes courses, team-building activities, orienteering, canoeing, archery and rock climbing. In interviews with students of Outward Bound, an expedition-style adventure education organization, researchers found that students developed tools for dealing with stress and anxiety as well as felt that they both gave and received social support with peers (Hattie et al., 1997). Adventure-based activities are an effective tactic for bolstering self-esteem in youth in both preventative circumstances and interventions (Nassar-McMillan & Cashwell, 1997). This section will outline what adventure education is, its prevalence already in environmental education, and its documented impact on students. While adventure education has been a part of environmental education programs for many years, focusing adventure education learning goals towards having specific social and emotional learning outcomes could increase the impact that these activities have on students.

At its simplest understanding, adventure education deals with activities that involve some level of risk, danger, or uncertainty (Ewert & Garvey, 2007; Miles & Priest, 1990) however more modern approaches to adventure education encapsulate a more specific goal and scope with activities that focus on themes such as prioritizing student agency, a constructive level of uncertainty, building and applying skills, and engaging in authentic learning environments (Brown & Beames, 2017). Kane and Tucker (2004) note

that by focusing only on risk in adventure, programs are ignoring other benefits that participants receive and seek such as achievement, excitement, social interaction, problem solving, and developing and practicing skills. The engagement with risk in adventurous activities is not the goal, but rather the enjoyment of the activity, connection with the natural world, and the feeling of mastery of skills, knowledge, and experience (Brown & Beames, 2017)**.** The perception of risk and uncertainty in adventure education should be mitigated wherever possible in order for students to be able to focus on these more specific goals. (Brown & Beames, 2017). For example, in a rock climbing activity, instructors should take measures to not only ensure the safety of participants and mitigate the risk of the activity, but also allow the students to know this is happening. This allows students to feel the exhilaration of the experience, while having the knowledge that they are engaging in the experience in a safe manner. The goal is not to put the student at risk or to have the student think they are being put at risk, but rather to allow the student to have an experience in which they feel excitement, accomplishment, and a constructive level of uncertainty.

Brown and Beames (2017) stress the importance of adventure education focusing on still being student-centered, providing opportunities for autonomy, reflection, ownership, responsibility, and decision making from the student. Additionally, students should have input in the challenge, rather than a specific challenge being imposed upon them. In the rock climbing example, this would translate to having students choose what to climb or how high they want to climb. This could be framed in a goal-setting exercise and instructors and staff would help the student achieve their own goal, keeping the focus

on the student. From the field of positive psychology, Berman and Davis-Berman (2005) assert that putting students in situations of uncertainty or perceived risk in outdoor education could be counterproductive if students are pushed too far and their perception of risk is much higher than is realized. They caution that educators should not needlessly increase the perception of risk and that they need to be aware that simply attending an outdoor education program may be largely outside the comfort zone of some students.

It is important to note that the experiences such as getting outside one's comfort zone, perseverance, and team-building are not exclusively experienced in adventure education. These experiences can be had within other realms of environmental education. For example, working with new people, walking in the woods during a science activity, or spending a night away from home can all be experiences that build upon some of the outcomes that are emphasized in adventure education.

Adventure education holds a lot of potential for building social and emotional skills. While its goals may not fit within science or history standards that are met by other fields of environmental education subject matter, the learning outcomes for social and emotional skills from well applied adventure curriculum can achieve impactful learning for students. Intentional activity framing and reflection can increase the learning gains of these experiences. This field within environmental education presents a great opportunity to build social and emotional skills and increase the confidence and independence of students.

Summary

This chapter provided a thorough review of the literature surrounding the question: *how can environmental education best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students?* It broadly described environmental education to provide information on the setting of the question. It explored the benefits and impact of environmental education that has been documented in the literature, specifically focusing on the benefits to childhood mental health and the building of social and emotional skills. This chapter then explored the body of literature around childhood mental health and the importance for development of emotional and social skills of youth. This chapter then delved into four approaches to building social and emotional skills in youth that will be applied to environmental education through the development of the capstone project which will be described in Chapter Three. The following chapter will describe the project in depth, including the framework, process, and context.

CHAPTER THREE

Project Description

Introduction

Extensive research has continually documented the benefits to spending time outdoors and in nature including reducing stress and depression and increasing self-esteem, self-efficacy, overall mental health, resilience, and quality of life in children and young adults (Kemple et al., 2016; E. Mygind, 2009; L. Mygind et al., 2019; Tillmann et al., 2018). Yet, children spend less time outside, engaging in independent activities, and with unstructured play time, partially due to a culture of risk avoidance and child safety, despite it never being a safer time to be a child (Children's Play Council, 2002; Côté-Lussier et al., 2015; Little & Wyver, 2008; Pellegrini & Bjorklund, 2004; Rivkin, 1995; Skenazy, 2021; Vincenten et al., 2005). Environmental education provides an opportunity for children to engage in nature and the outdoors and reap the social, emotional, and physical benefits that it provides. Environmental education and outdoor learning opportunities have been shown to improve academic achievement, increase critical thinking skills, and develop social and emotional skills – most notably confidence, independence, and leadership (Ardoin et al., 2018; Heras et al., 2020; Humberstone & Stan, 2011; Tiplady & Menter, 2021). The development of social and emotional skills, like those that can be gained through environmental education opportunities, influence children's perception of risk, self-esteem, relationships and interactions with peers which have substantial impacts on childhood mental health (Halpern & Figueiras, 2004). Chapter Two identified four approaches: social emotional

learning, Maslow's hierarchy of needs, risky play, and adventure education that can be utilized to build social and emotional skills in the environmental education setting.

This chapter describes the project, framework, setting and audience, timeline, and assessment for the culminating professional development materials for environmental educators which helps address the question: *how can environmental education best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students?*

Project Description

The four approaches to building social and emotional skills outlined in Chapter Two were applied to the context of environmental education through the creation of professional development materials and can be delivered through professional development trainings. After delivery of the professional development trainings at local environmental education centers, the professional development materials are given to the centers' staff for them to be able to use as a resource to share and continue to train future educators with. These professional development materials were designed to provide both broad program-wide applications directed towards programmatic structures and curriculum and specific tools and applications for teaching approaches directed towards use by individual educators.

The professional development materials are divided into four sub-trainings that are designed to be able to be utilized together or independently. These sub-trainings include trainings on the specific approaches to building social and emotional skills in environmental education settings. Sub-training summaries are as follows.

Social Emotional Learning: the SEL Framework

This training and the accompanying materials provide an introduction to the SEL framework as outlined by the Collaborative for Academic, Social, and Emotional Learning and how it can be incorporated into environmental education.

Centering the Hierarchy of Needs

This training explores Maslow's Hierarchy of Needs and provides insight on how to incorporate meeting those needs through all aspects of environmental education programming from the structure of programming to the teaching techniques of the educators.

Let the Kids Run! Embracing Risky Play in EE

This training delves into the benefits of risky play, how to incorporate risky play while balancing safety concerns, and recognizing areas in existing programming where this already exists and how to get the most out of these areas.

Achieving More with Adventure Education

This training explores how to focus learning goals in adventure education to build social and emotional skills.

Prior to creation, a physical format was created for each of the sub-training materials. The format was created on Microsoft Publisher in order to ensure consistency of format throughout the material. Each approach-specific training includes a programmatic lens that provides tactics and examples for incorporating the approach into curriculum, program goals, and structure as well as a practitioner lens that provides tactics and examples for incorporating approaches into teaching techniques and behavior

management tools that educators can implement independently. The format includes sidebars with resources for more information, popouts with specific application examples, prompts for discussion, and quick-reference guides that review key tactics and techniques.

Each sub-training is designed to encompass a 90-minute to 3-hour block of time. Although additional resources and prompts included in the sub-training materials are designed to encourage additional discussion amongst the group and can extend the training if more depth is desired. The materials are designed to provide the resources necessary to engage fully with the subject and for a user to provide a training based off of the materials. Additionally, the resources and information provide a simple way for an educator to gain a few tips to support more social and emotional skill-building in their teaching style.

Framework

The research and literature presented and analyzed in Chapter Two shape the learning goals and sections for the professional development materials. The materials utilize a framework centered around effective features of teacher professional development compiled by the Learning Policy Institute that proposes that effective professional development incorporates many or all of the following features: content focused, incorporates active learning, supports collaboration, uses models of effective practice, provides coaching and expert support, offers feedback and reflection, and sustained duration (Darling-Hammond et al., 2017).

While I plan to deliver this professional development through a series of training sessions delivered to local environmental education centers, these professional development materials will also be able to be used independently. With environmental education centers scattered across the county, serving wide regions of schools, and often located in remote areas, environmental education centers have always thrived with open communication and shared resources between centers and educators. National organizations, such as the North American Association of Environmental Educators (NAAEE), the University of California's Lawrence Hall of Science's Better Environmental Education, Teaching, Learning & Expertise Sharing (BEETLES), and the Association of Nature Center Administrators (ANCA) are useful outlets for shared resources, knowledge, professional development, and curriculum. I modeled my professional development materials after resources provided by these organizations, so that the professional development materials that I have developed can be used independently by organizations and educators to run their own professional development trainings for teaching staff.

Setting and Audience

These professional development materials are targeted towards educators that teach at outdoor environmental education centers that cater towards providing programs directed at youth. This audience contains educators with a wide range of backgrounds and experience teaching, including experienced career educators, program managers, curriculum writers, as well as seasonal educators that may have little to no experience teaching. These professional development materials are designed to provide both broad

insight to apply program-wide and tangible tools that can be utilized on the ground by educators without substantive changes to programmatic structure or curriculum.

My delivery of these professional development materials will happen at training sessions with one to three local environmental education centers, depending on the training schedules of the organizations. The training sessions may vary between 1.5 hour to multi-day sessions, depending on the desires of and relevancy towards the organization -- for the full training or only certain sub-trainings.

Timeline

This project was developed over the span of four months in the spring of 2022. January was spent developing an organized structure based on the framework for professional development outlined in the previous Framework section. February and March were spent creating the content and consulting with my content reviewer. April was spent creating the physical materials, inputting the content into the format, and editing the materials. The professional development training will happen at a local environmental learning center in the late spring or early fall, depending on the schedule of the institution.

Assessment

The professional development materials conclude with a discussion prompt for trainers to utilize in order to ascertain the effectiveness of the training, the relevance and applicability of the information, and record specific ideas generated from the training and surrounding discussion. Participants in trainings will be able to give oral feedback through the discussion that may be recorded by the training facilitator. Users of the

professional development materials will be able to submit feedback from the feedback form via email as well as be able to incorporate feedback directly into their future use of the trainings.

Conclusion

This chapter described the process of designing these professional development materials, the framework utilized, and their distribution for addressing the question: *how can environmental education best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students?* It also discussed some of the specific details involved in the planning for and implementation of this project. It provides summaries for each of the sub-trainings and a rationale for the structure of the professional development materials. The following chapter will conclude this capstone with reflections on the project process and thoughts towards future work with this topic.

CHAPTER FOUR

Conclusion

Introduction

The last nine months have been dedicated towards answering the question: *how can environmental education best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students?* This has culminated in the creation of professional development materials that aid in addressing this question by providing materials to train environmental educators and leaders within environmental education programs in how to better tailor programs to build social and emotional skills in students.

This chapter will conclude this capstone with reflections on my learnings throughout the capstone process in order to elaborate on key take-aways for myself as a writer, researcher, and learner. It will also discuss the implications of my project both for the target audience of environmental education programs, as well as the broader implications for the reach of the project. Finally it will address the limitations and the next steps, both for my delivery of the project and for further research in this field. This will identify areas not able to be addressed within the scope of the project and areas ripe for further research and application by future research. Additionally, it will discuss the planned implementation of my project.

Capstone Learnings

The capstone process was a valuable learning experience for me on many fronts. This section will highlight some of the key takeaways from my capstone as a researcher, writer, and learner.

The capstone process as a whole was an incredibly valuable experience to engage with as a researcher, writer, and learner. The process of researching and writing at such length and detail lends itself to a renewed passion for continual learning and engaging actively in a community of learners within the education field. It was valuable to undergo this process with a group of peers whose diverse approaches to researching, writing, and learning provided me with valuable insights and new perspectives in how to engage with my own capstone. I learned new methods of organizing research, writing approaches, and gained useful tactics for undertaking a large and long research project.

As a researcher, the capstone project was a rewarding way to engage in academic research. Having written a research thesis to conclude my undergraduate degree, the process itself was familiar; however, it was remarkable and surprising how much more rewarding it was to complete a capstone project. My year's work to conclude my graduate degree was able to produce something that has the potential to have immediate application and impact into the field of environmental education. While research itself is incredibly valuable and ultimately can lead to change and betterment within a field, the direct impact of producing a tool that can be applied and shared now, ready to use, feels tangibly effective and applicable. Especially having worked in the field as an educator, the target audience for this project, having a tool ready to use is remarkably valuable.

Receiving research and new information is also valuable, but comes with the necessary next step of creating the application of new knowledge to the field. Environmental education programs, in my experience, are run with many dedicated people wearing many hats and time is a valuable and scarce resource. It feels much more meaningful to me as a researcher and educator to have created something that is ready to be utilized in the field. It is my hope that this project can be taken up and be used by individuals and organizations to train themselves and their staff. I certainly feel ready to apply what I have learned through this research both in facilitating the trainings that I have created materials for as well as applying the takeaways from the trainings and research directly into my teaching.

Through my research, I learned a lot about my field and have grown tremendously in my capacity as an educator. Specifically, the research that I read in building my literature review surrounding risk and risky play were the most important to the development of my capstone and have reshaped my understanding of the development and education of children. John Adams's (1995) seminal work, *Risk,* played a major role in my understanding of risk, risk perception, and the value of risk. The impact of how our society looks at and addresses risk was a huge driving force towards the development of my capstone and my focus on the importance of highlighting the areas in environmental education that engages with risk in a healthy way. Little and Wyver (2008), Farmer et al. (2007), Stover (2013), Moyles (2012), and Côté-Lussier et al. (2015) were essential works in providing the context and argument for why it is essential for healthy child development for children to engage with risk in order to develop skills such as accurate

risk perception, confidence, healthy self-esteem, and social skills. These works also highlighted the degree to which the mental, physical, and social health of our children suffers from a societal culture and policy initiatives that focus solely on risk prevention without weighing the benefits of exposure to age-appropriate risk. The conclusions drawn by these works helped to cement the rationale behind both my research question as well as the importance of the application of my question through my capstone project.

My capstone project was heavily influenced by the works of Norwegian researcher Ellen Sandseter (2007; 2009) who is the leading expert on risky play for children. Her works outlined the groundwork of what risky play is, its impact, and how it can be framed and utilized with children. Sandseter's works laid the foundation from which I was able to specifically connect areas in environmental education programming to the concepts and applications of risky play that she outlined. Together, with the additional works from Coe (2017), Knight (2011), and Tiplady and Menter (2021) whose research on risky play in nature preschools and forest kindergartens, these works provided a body of research that gave validity to the connections that I drew from research on risk, child development, and mental health to the context of environmental education and how it holds natural strengths in facilitating risky play for children.

The structure of my project was most importantly influenced by the professional development materials of BEETLES (n.d., 2020). The framework and structure provided by the professional development materials designed by and for environmental educators were essential to creating my project. BEETLES materials provided successful, and well-utilized in the field, examples of trainings that I sought to model my own project

after in order to create something that would be useful and practical for environmental education programs to utilize.

The process of researching, writing, and creating my capstone project has been an immense learning experience for me. This section reviewed important reflections on my learnings. Collaborating with a cohort of peers undergoing a similar process was a valuable learning experience and played an important role in my research and writing process. I gained immense value as a researcher from creating an applicable product from my research that felt impactful to the field of environmental education. The research surrounding risk and risky play were perhaps the most important works that I read in influencing and informing my research and project. Additionally, the structure of BEETLES trainings provided an essential framework for me to model the structure of my professional development materials after. This process was filled with personal learning and growth, however, the true reach of this project will be gained through the implications it has for the field of environmental education, educators in the field, and the students that benefit from environmental education programs.

Capstone Implications

The intentional integration of social and emotional learning into environmental education is on the forefront of new changes in the field of environmental education. This section will discuss the implications of this capstone project to the broad field of environmental education, individual educators in the field, as well as the students that participate in environmental education programs.

Social and emotional learning has been gaining traction within the field of environmental education in the past few years. This is evidenced by a toolkit being put together through a collaboration between 11 different environmental education programs nationwide to integrate SEL into programs that has been in progress since 2018 (Grow Outside, n.d.). This new focus on an approach to build social and emotional skills in students attending environmental education programs shows a desire to learn and integrate this concept into the field. It also creates a need for resources, training, and tools to be able to incorporate social and emotional skill building in environmental education. This capstone project supports this need as it helps to fill the void of environmental education specific resources that target the development of social and emotional skills for the purpose of building healthy self-esteem and confidence in students. Because of the structure of the project, the training will be able to be spread from program to program and be utilized by many educators without the need for myself to conduct every single training session. The materials are set up in a manner to give a facilitator all the information they need in order to conduct the trainings themselves. This allows the trainings to reach more educators and more programs.

These trainings also have the implications of helping to create better educators who are able to meet the learning needs of all students. Training for environmental educators is an essential tool in creating well-qualified and effective educators. The materials created through this project provide a useful tool for programs to increase the efficacy of their educators as well as creating an opportunity for individual educators to engage directly with the materials.

As more educators and programs incorporate more social and emotional skill building into their programs, this will provide increases in the learning gains for the students that participate in these programs. While students already receive benefits in social and emotional learning from participating in environmental education programs, capitalizing on these benefits by intentionally incorporating social and emotional learning into the program structure, curriculum, and teaching techniques of educators will allow students to get more out of these experiences.

In the large scope, as the benefits and learnings of environmental education programs continue to improve, the value of these programs to students nationwide will also increase. This could also have significant policy implications for the improved financial support of schools to seek out and fund environmental education experiences for their students. Additionally, it could provide additional public and private funding for environmental education programs, many of which are run by nonprofit groups. While Oregon, Washington, and California all have legislation that supports the funding of and attendance at outdoor education opportunities for students, there are many states where students do not have access to these types of learning opportunities (California Outdoor Schools Association, 2021; Friends of Outdoor School, n.d.). Improved support through local, state, and national policy could also increase the reach of environmental education.

This capstone holds direct implications for the incorporation of social and emotional learning into the field of environmental education. It provides tangible resources that will help programs incorporate these concepts as well as train educators to support them. The application of these trainings into environmental education programs

will have implications for increasing the social and emotional skill building of students that attend these programs. The increased benefits of students from environmental education programs has potential policy implications of increased support in state and national legislation that could help to increase access and funding for environmental education. This capstone project is just one small piece of this process and there are limitations to its impact as well as areas that can be addressed by future research.

Limitations and Next Steps

This section will identify limitations of this capstone project, then will discuss areas for future research and projects. Finally, it will discuss how this project will be implemented.

This capstone focused on environmental education programs, such as outdoor schools, that take place away from the traditional school environment. Oftentimes these programs are short in duration, 1-3 days, and sometimes students spend the night in a residential setting. This type of program does not encompass all environmental education programs. Some programs such as nature centers and programs operating within schools have a different structure, such as seeing students weekly or monthly. Different program structures may allow for differing levels of applicability for all aspects of these trainings. While some of the approaches identified still have applications to other program types, some trainings may be more relevant than others. Additionally, there may be more opportunities for partnering with schools more directly if the programs are run more consistently. This may mean that different approaches are more relevant. This provides space for further research and development of resources to specifically address differing

program structures, such as continuous program attendance, or programs conducted in urban environments.

Another limitation of this capstone is the newness of the application of social and emotional learning research to the field of environmental education. There was very little literature that looked at specific gains or long-term benefits of social and emotional learning outcomes in environmental education. This provides a ripe environment for future research that can look at the efficacy of the implementation of social and emotional learning in environmental education. Studies that look at the longevity of the impact are especially needed, as very few studies in environmental education have looked at the long-term benefits and effects of programs.

This capstone project will initially be disseminated through a training series at the North Cascades Institute for their Mountain School staff. While the dates and details are still pending, either myself or their Mountain School Manager will deliver the trainings depending on the training schedule and school schedule. The trainings will provide feedback through the training evaluations, structured in a discussion format at the end of each training session, which will allow me to adjust the content of the trainings before further dissemination. After the conclusion of the trial training with the North Cascades Institute, the professional development materials will be given to all of the program staff and educators for them to reference and share as they see fit, including bringing them to other organizations. Additionally, the trainings will be sent to a number of other local environmental educations programs as well as programs across the country that I have connections with.

The limitations of this project provide opportunities for further research and projects. The scope of this project is limited to field-trip styles, residential focused environmental education programs, however there are many other types of programs that exist. This provides room for future research to look into how social and emotional learning goals can be extended to other types of programs. Additionally, this research is limited by the newness of the application of this concept to environmental education. Studies of the efficacy of incorporating social and emotional learning outcomes and methods in environmental education is still needed. Despite its limitations, these trainings will provide valuable professional development to environmental education programs through its dissemination both through a scheduled training session and providing the materials to numerous educators and programs for their own usage.

Conclusion

This chapter concluded the capstone described the learnings, implications, limitations, and next steps of this capstone project. The professional development materials that resulted sought to answer: *how can environmental education best facilitate outdoor learning environments that foster the social and emotional skills necessary for building healthy self-esteem in students?* This chapter reflected on the capstone process, personal learnings, and significant research. Additionally it discussed various implications of the project, while reflecting on its limitations. The limitations, however, provide avenues for future research and work in the field. Finally, this chapter described how this project will be disseminated through the environmental education community.

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