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Perceptions of Nature-Based Educators: A Phenomenological Study

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PERCEPTIONS OF NATURE-BASED EDUCATORS: A PHENOMENOLOGICAL STUDY

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Dedication

This work is dedicated to my children, Linleigh James and Kellan Danielle Mashburn, in hopes that it will one day have a positive impact on the world they live in; my constant rock and husband, CJ Mashburn; and to my family that has always supported and loved me throughout my educational journey, Kelly, Susan, and Shelby McGehee. To say I love each of you is an understatement. Thank you for listening to me talk about this research, and for reading drafts. Thank you for pushing me to keep going, and for reining me in when I had too many ideas at one time. Thank you for praying for me and managing things so that I could write.

Mom and Dad, thank you for preparing me for the realities of life, ensuring that my faith was as strong a tree that is planted by the water, and giving me the best life that a person could ask for. Thank you for constantly reminding me that change is uncomfortable, but that we grow through uncomfortable experiences.

CJ, thank you for never giving up on me, and for constantly reminding me that I can do anything I set my mind to. Thank you for sharing this life with me and for always being in my corner, come what may. We were made for each other and I am thankful that God placed you in my path.

Finally, to my girls, Linleigh and Kellan, I love you more than anything. You are my daily motivation and inspiration for everything that I do. Stay magical, stay curious, and stay kind.

Acknowledgments

"Be ye strong therefore, and let not your hands be weak: for your work shall be rewarded."

2 Chronicles 15:7, King James Bible

To my advisor and dissertation chair, Dr. John Freeman, thank you for taking a risk on this project and providing me with constant guidance on how to improve it. I appreciate the time that you dedicated to ensuring that this study was the best it could be, and for the knowledge you have shared with our cohort. To my dissertation committee members, Dr. Pam Dixon and Dr. Sheila Jacobs, I am so thankful to have had your expertise and willingness to serve as my committee members, especially given the nature of a new study. The insight and suggestions that you contributed to this study allowed it to become more than I imagined. To my professor and the Graduate College Dean, Dr. Sarah Gordon, thank you for teaching me how to collect, analyze, and thoroughly write qualitative research. You have shaped my perception of qualitative research and it is because of your contributions to our cohort, I am more developed as a researcher and educational leader.

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To my Doctoral Cohort, thank you for sharing your diverse backgrounds and knowledge. I am grateful to call you all colleagues and friends. Our educational journeys have all led us to this cohort, and to me, that is something special. I cannot wait to see where we end up as educational leaders and know that our dedication to the field of education will create change.

Abstract

PERCEPTIONS OF NATURE-BASED EDUCATORS:

A PHENOMENOLOGICAL STUDY

Jessica Mashburn

The purpose of this qualitative phenomenological study was to explore the perceptions of practicing nature-based educators and to find how classroom educators can become skilled in providing students with opportunities to learn in nature. In the study, there were 13 participants who represented a variety of individuals, with impressive educational credentials, who are currently employed or volunteering with a nature-based education organization. The data were collected through an intensive literature review, participant interviews, and field observations within two nature-based education organizations. The major findings include the overall difference between nature-based education and the typical classroom setting, as well as the current trends that are noticeably hindering the progression of nature-based education in Arkansas. Themes that presented concerns for the progression of implementing nature-based education within the daily structure of the school setting include: the challenges presented in nature-based education, the lack of training and professional development opportunities, and the current level of administrative support.

Keywords: nature-based education, curriculum, virtual learning, holistic education, professional development

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Chapter I: Introduction

Nature-Based Learning (NBL) is a progressive form of education in which students engage in meaningful learning in an outdoor environment. It is an educational approach that uses the natural environment as the context for learning and investigates learning about nature through direct engagement with the natural world as a setting for all curriculum areas, and the impact on learning in general (Chawla, 2018). Mullender-Wijnsma et al. (2015) indicate that the typical four-walled classroom that most students experience learning in is becoming an inducer of stress, anxiety, and inactivity which is promoting less cognitive engagement for students. Their findings suggest that physically active academic lessons may be an innovative way for teachers to increase children's academic engagement and physical activity without losing time intended for academic learning.

With multiple elements impacting the current construct of our educational systems, students are being exposed to educational practices that are constantly under pressure. Curriculum changes, political influences, and local governments play a key role in what students learn and how they are educated. Sleep, exercise, and other motivators allow children to engage in educational opportunities with a clear mind, making learning more meaningful and connected. Environmental factors such as parental involvement and socioeconomic status influence a child's development. Parents also play an important role when it comes to the development of cognitive and non-cognitive skills development of their children (Hoorani et al., 2022). Because the academic engagement of children during a school day is positively related to academic success, it is important for schools to make effective use of official school time and ensure that children's time on task is as

high as possible (Scheerens et al., 2013). We have geared our education system towards measuring intelligence through formal assessments. The ability and intelligence of an individual are only measured by academic excellence. The education system is now more focused on academic achievement and marginalizes the activities of co-curricular and non-examination subjects. This action resulted in a stressful learning environment, or school environment which is somewhat isolated from the community hence giving rise to group polarization and comprehensive development of the character and personality of the students to be less than satisfactory (Harun, 2014). Restructuring the typical classroom into an explorative, active, and natural setting can allow educational systems to enrich the educational process for all students.

Though there is a plethora of resources exhibiting the importance of nature-based learning for early childhood, there is limited literature available that provides a clear discussion of the importance of nature-based learning for K-12 students. Due to the lack of research in this specific area of education, this study is impactful to the field of education. This study extends further than the current research in that the focus is on the perceptions of nature-based educators. The findings gained in this research can inform future educational practices in multiple ways.

A recent study in Scotland provides multiple perspectives on nature-based learning. The Scottish Natural Heritage and Learning and Teaching Scotland through the Outdoor Connections development program initiated and supported the development of the report. Findings show that the government is in support of promoting outdoor education. In 2005 the Minister for Education in Scotland initiated and funded a two-year development program called ‘Outdoor Connections’. The focus of this program is to

"make connections across current and emerging outdoor education priorities and policies, programmes and people; and to develop and distribute resources which will continue to improve the quality of outdoor learning" (Nicol et al., 2007, p. 2).

The study also presented a key finding centered around the perspectives of young people. Young people value experiences that: are fun or enjoyable, often involving doing something new and doing activities that engaged the senses; leave them feeling uninhibited: being 'free', outdoors, setting their own agenda, not being rushed, being close to nature; feel authentic and contingent, i.e. relating to the hands-on nature of the practical activity, encounters with animals, being exposed to the effects of the weather and not always knowing what will happen next (Nicol et al., 2007).

Background of the Problem

There is a lack of nature-based education in Arkansas. Though typical classroom practice has evolved over the years, the area of nature-based education is still deficient. Issues that remain unsolved include how to properly train and educate K-12 educators in providing quality nature-based education to students, and the amount of support that teachers currently have from the administration in promoting nature-based learning. Teachers in K-12 schools in Arkansas typically teach surrounded by four walls that make up their classroom. In the Kindergarten stage, a classroom will have five to six centers in which students can choose specific learning activities. First grade and up begin to shift into the well-structured environment of having one's own desk. There are flexible options as far as seating and classroom arrangement, yet the classroom is still missing something crucial to holistic education.

Given the opportunity to gain perceptions of practicing nature-based educators and experience how to manage to implement a curriculum within a nature-based classroom, there is no doubt that teachers and students alike will become more satisfied with the school day. Training and exposure to how nature-based learning is combined with typical classroom structure can allow Arkansas teachers to maintain the classroom experiences they want to provide their students on a curricular level, and given the proper tools to take the classroom to nature will open new doors for unlimited learning on more than an academic playing field.

Problem Statement

Arkansas is currently lacking in the application of nature-based learning for K-12 students. Though there are multiple factors that contribute to this issue, the lack of resources, discussion of, and exposure to nature-based learning practices are only contributing to the hesitation of current classroom educators to provide learning opportunities in a nature-based setting. More research is needed to establish the perceptions of practicing nature-based educators and to find how classroom educators can become fluent in providing students with opportunities to gain experiences in nature. This research is valuable for multiple educational stakeholders including school leaders, classroom teachers, students, and parents. The comfort of the four-walled classroom is increasing the lack of student engagement, mental and physical health issues, and developmental delays. Arkansas educational stakeholders must take greater measures in supporting classroom educators in providing holistic education and learning opportunities for students, and nature-based learning is a key element in that process.

Purpose of the Study

The purpose of this qualitative phenomenological study was to explore the perceptions of practicing nature-based educators and to find how classroom educators can become skilled in providing students with opportunities to learn in nature. Other key elements within the study explored how nature-based learning offers a holistic education approach, along with an examination of the overall impact of nature-based learning.

Definition of Terms

Cross-Curricular: The cross-curricular approach, however, teaches a number of subjects using a theme or topic as a central core. For example, a topic on Sound may include some scientific investigations, various types of writing (English), mathematical surveys, collage (art), etc (Figure 1). The cross-curricular approach enables the teacher to provide a vehicle through which children can apply the skills and concepts gained from subject teaching (HG, J. H., 2012).

Mental Health: Mental health can be defined as the absence of mental disease or it can be defined as a state of being that also includes the biological, psychological or social factors which contribute to an individual's mental state and ability to function within the environment (Manwell, 2015).

Nature-based learning environment: NBL is an educational approach that uses the natural environment as the context for learning. It investigates learning about nature through direct engagement with the natural world, learning outdoors in nature as a setting for all curriculum areas, and the impact of natural surroundings on learning in general (Chawla, 2018).

Typical Classroom Setting: A traditional classroom, which means a batch of students coming and sitting physically in a room and often meeting some teachers daily within the four painted walls, has taken a shift in its efforts of teachers (Hasan, 2016).

Research Questions

With concerns about nature-based learning built around intimidation, lack of experience, and little research, Arkansas is currently lacking in the application of nature-based learning. By presenting the perceptions of current nature-based educators, K-12 classrooms can see the value of educating the whole child by incorporating nature-based learning in everyday practice. The following research question guided this qualitative study: What are the perceptions of nature-based educators regarding the value of incorporating nature-based learning into the overall Arkansas K-12 curriculum?

Significance of the Study

This study provides insight into learning in a nature-based environment and the methodology and practices that are most suitable for learning outdoors. It discusses the overall perceptions of current nature-based educators, acknowledges the benefits and challenges of nature-based learning, and sheds light on what seems to be out-of-reach to typical classroom teachers. This information contributes to the progression of our current educational practices. It also provides guidance on how current nature-based teaching methodologies are being implemented and what professional training classroom teachers need in order to create an effective nature-based classroom. Teachers, administrators, parents, and more so, students, will gain from this study as it helps the learning community understand how impactful nature-based learning can be.

In short, this study is crucial for the potential growth of educational practices within the educational system, specifically in Arkansas. Some states have well-developed nature-based classrooms and instructional materials; however, Arkansas is not one of those states. Students need exposure to settings that can help them develop holistically. In turn, it is hopeful that this research will promote the requirement of nature-based learning experiences for students and for professional development opportunities to be created for classroom teachers.

Assumptions

The assumptions related to this research include the following: Interviewees will have had experience in both a typical classroom setting, and a nature-based classroom setting. Interviewees will discuss nature-based learning as unbiasedly as possible allowing the research to remain unbiased by representing the positives and negatives that accompany teaching and leading in the outdoors. Interviewees will provide truthful statements about their experiences gained while working in a nature-based environment. Nature-based facilities will provide examples of curriculum implementation and other resources for this study. Observations will be well-planned and provide deeper insight into how nature-based education is developed and experienced by students and teachers.

Limitations

The limitations related to this research include the following: Scheduled observations may be interrupted due to concerning weather. Scheduled observations may be limited based on school district issues, such as field trip cancelations. Research participants may procrastinate in completing consent forms, and returning them, causing

a delay in the progress of interviews. Research participants may change their minds and choose not to participate in the research project.

Delimitations

The delimitations for this study include a group of individuals that were not interviewed or observed by the researcher. For this study, the following individuals were not interviewed: non-teachers, school building-level administrators, students' parents, or college professors. For this study, the following individuals were not observed: non-teachers, school building-level administrators, college professors, or counselors. These groups were considered as groups that are not relevant to the study or research questions. Though they are all vital to the educational process, their input on the specific purpose of this study was not essential to the research method or data analysis.

Organization of the Study

The purpose of this qualitative case study was to explore the perceptions of practicing nature-based educators and to find how classroom educators can become fluent in providing students with opportunities to gain experiences in nature. Other key elements within the study explored how nature-based learning offers a holistic education approach, along with an examination of the overall impact of nature-based learning. Given the opportunity to learn how to implement a curriculum within a nature-based classroom, there is no doubt that teachers and students alike will become more satisfied with the school day.

The remainder of this study includes a detailed literature review focusing on the following topics: nature-based learning in a historical context, current trends in nature-based learning in Arkansas, curricular influences that accompany nature-based learning,

virtual learning and its impacts of it on students, motivators, and benefits of nature-based learning and common holistic education elements found through nature-based learning.

Chapter II: Literature Review

As the purpose of this qualitative study was to explore the perceptions of practicing nature-based educators and to find how classroom educators can become skilled in providing students with opportunities to learn in nature, a review of the current research and literature is provided. Arkansas classrooms show limited opportunities for public schools to invite nature-based learning into the everyday structure. Any content area and the standards it follows can be implemented in a nature-based environment. However, the typical classroom educator is unfamiliar with nature-based learning and all that it provides.

Respectfully, professional development opportunities are limited regarding nature-based instruction and teaching methodologies. As this is an element that must improve, research providing insight into nature-based learning must be conducted. Along with the motivators and benefits that nature-based learning provides, the presented literature review demonstrates how educational organizations and educators can utilize nature-based learning and change the way students view educational opportunities. Providing the perspectives and experiences of nature-based educators is key.

Review of Existing Research

Nature-based learning (NBL) is also referred to as outdoor education, adventure learning, and place-based learning. In general, outdoor education can be described as teaching and/or learning and/or experience in an outdoor and/or out-of-school environment (Becker, 2017). With multiple positive components, one offering of nature-based learning is that it is free for everyone. Nature-based learning, combined with holistic education creates a student-learning dynamic that promotes lifelong learning and

a need for continual growth. NBL is an educational approach that uses the natural environment as the context for learning. It investigates learning about nature through direct engagement with the natural world, learning outdoors in nature as a setting for all curriculum areas, and the impact of natural surroundings on learning in general (Chawla, 2018).

Common Core State Standards provide the academic curriculum for schools. To further the holistic development of children, teachers must also nurture exposure to moral development, character education, environmental education, and self-learning.
NBL invites students and teachers to learn collaboratively. It supplies a strong structure for enrichment in areas of education other than science, math, language, writing, and history.

In Arkansas, the Common Core State Standards are the acknowledged curriculum. The standards are broken down into the categories of content area and grade level. The need for a standard curriculum is supported through forms of standardized assessments, the current assessment in use is the ACT Aspire. Though the curriculum is well-developed and allows teachers to implement the curriculum standards through individually chosen methodologies, the curriculum lacks the support of nature-based learning.

Outdoor education can encompass many subjects and varied styles of learning (Outdoor Education, 1989). Outdoor education is a subject in schools that does include both effective ways of knowing nature and a more reasoned study of human-to-nature relationships (Martin, 2010). In addition to curricular changes, teachers must also be provided with professional development opportunities that raise awareness regarding

outdoor education. Outdoor education teaches risk assessment as a process in a safely monitored context, but one where the real consequence is evident and feedback mechanisms are strong to facilitate effective learning (Martin, 2010).

Perceptions of Nature-Based Learning in Education

Educational programs that immerse individuals in nature have been designed to build an appreciation for places traveled, awareness of environmental issues, and to promote pro-environmental behaviors (Baird et al., 2022). In the Miller et al. (2022) study, participants felt that nature-based play and learning provided more opportunities for 'hands-on' and real-world learning and that this helped children to be engaged in class and feel like what they were learning about was relevant to their lives. A connection with nature creates a sense of belonging to the wider natural world as part of a larger community of nature (Mayer et al., 2009). Nature connectedness is therefore an appreciation and value for all life that transcends any objective use of nature for humanity's purposes (Nisbet, 2009).

Advantages of Nature-based Learning

Studies prove that outdoor learning is connected to multiple benefits. Decreasing anxiety, promoting bodily movement, and inclusion are achieved with nature-based learning. Integrating nature interventions with teaching and learning practices can provide welcome cognitive relief for highly anxious young people feeling the pressures of academic performance and testing (Vella-Brodrick & Gilowska, 2022). Outdoor education emphasizes learning in all domains through physical activity as well as physical well-being (Bunting, 1989).

In Sandra Austin's study, she discovered that school gardens promote inclusiveness. Gardens are identified by the teachers as inclusive spaces where children who may otherwise feel marginalized can participate fully. Whether they suffer from autism, behavioral issues, or struggle academically, the garden is somewhere that children who might otherwise feel excluded can connect socially, participate fully, and feel a sense of achievement (Austin, 2022).

Outdoor learning opens many doors for students to experience and live happier and healthier lives. By spending time outdoors, children can develop holistically – physically, mentally, socially, and emotionally - into individuals who can treat their peers and nature with respect. Nature can also indirectly influence health by mitigating risks associated with other areas of people's lives. For example, exposure to nature has been tied to a reduction in stress and blood pressure, and feelings of restoration from nature may actually increase with higher levels of biodiversity, such as the number of plant or bird species that can be seen in an area. This effect is thought to arise by providing relief from mental fatigue (the attention restoration theory), and/or by providing a low-stress environment (the stress reduction theory) (Shanahan, 2016). Being surrounded by nature causes peace within any process.

Self-reflection, improved concentration, and even enhanced blood circulation and oxygen within the body occur often when outdoors. Nature offers many lessons at little to no cost. It promotes creativity, reduces stress, and with forethought, any curriculum can be implemented in an outdoor setting. Holistic development of children is formed through the combination of academic, social, emotional, and character development education. Finding balance for each of these elements through nature is achievable.

Curriculum Influences

There are many components to the curriculum. One element of the curriculum is learning techniques. To keep the learners engaged, the teachers need to provide them with a variety of exercises and activities. Also, the teachers should create situations in which the students could do the exercises in meaningful contexts, rather than just answering them in a mechanical and abstract way (Zohrabi, 2011).

Nature-based learning allows students to be exposed to elements that are not found in a typical indoor classroom. Outdoor learning encourages a critical foundation on which environmental care is based and can be used to integrate many elements of the main curriculum, including history, science, languages, and mathematics, especially geography (Asiyah, 2021). Any curriculum can be taken into the outdoors, in turn, allowing students to engage with personal senses, social development, and academic growth. Inquiry-Based Learning (IBL), the theory formed by John Dewey, suggests that IBL is comparable to student-centered learning and project-based learning.

IBL opens a door for students to investigate individual and explorative learning. Effective outdoor learning addresses the unique features of the environment and makes connections between school-based learning and the student's life experiences. It should enable some choices for the students, encourage their social interactions, and should be mediated by teachers who take the role of facilitators rather than transmitters of knowledge (Bamberger & Tal, 2007; Lavie Alon & Tal, 2017). More than the opportunity to engage in other forms of inquiry, the outdoor environment offers a variety of real phenomena to investigate and possible inquiry questions to ask, according to students' interests and choices (Tal, 2019).

IBL allows the classroom teacher to serve students as a facilitator of learning. Though students are adapting their learning to promote critical thinking, establish individuality, and are provided with the opportunity to grow through social interactions through group work, collaboration, and problem-solving strategies, hesitation may arise from teachers while implementing nature-based learning. Professional development programs (PD) can help teachers overcome such obstacles by developing their concept of inquiry-based learning and by enabling them to practice the teaching of inquiry in supported environments (Tal, 2019).

Like any new curriculum, theory implementation, or presentation of new teaching practices, specialized training is needed to improve comfort with a new element. Nature-based learning not only requires curriculum training but includes risk assessment preparation and adventure training. Teachers choosing to teach in a nature-based setting require support, materials, and continuous professional development to provide an ethical and holistic education for students. Developing a risk assessment is one way to create teacher-student rapport. Teachers can challenge students during the risk assessment development process by including them in the conversation about what poses risks on any adventure. Risk assessments allow students and teachers to evaluate and process potential risks that may be present during any given outdoor education session. By involving students in the risk analysis process, students gain critical thinking skills and confidence in planning and organization.

Virtual Learning and Technology

As in all elements of education, technology progression is undoubtedly consistent. Children are gaining access to tablets and cell phones at a much younger age. With

quarantining becoming a common result of the pandemic, education was delivered primarily through a digital format. From preschools to higher education, technology has slowly become vital to the educational process. Preschool children have been considered the most sensitive group regarding education during the COVID-19 pandemic. They are in a critical period of their social and cognitive development and often cannot respond to distance education (Silverman et al., 2020). The fact that early childhood is a critical period in which the skills of coping with emotions and establishing social relations are learned explains the social-emotional sensitivities of children during the pandemic (Jalango, 2021). Early childhood includes children from birth to eight years old. Students in kindergarten to third grade, though considered early childhood, are age groups that learned to mitigate virtual learning.

As a society, we have become more reliant on technology than ever before. Technology is becoming more easily incorporated into the daily lives of children starting at birth. In the education sector, the COVID-19 pandemic forced educators to increase their reliance on technology to the point of no return. Several factors form the healthy and stable mental health status of children. Family support, extra-curricular experiences, friendships, and the ability to understand self-worth are just a few things that contribute to forming a positive mental health status. Since the outbreak of the global pandemic, children have been secluded due to quarantine guidelines, have experienced loss, and have had to mitigate learning how to balance play and learning from home.

Unfortunately, access to cellphones, tablets, and computers poses the threat of children not being engaged in the outdoors. During the outbreak of COVID-19, the reduction of outdoor activities and social interaction may have been associated with an

increase in children's depressive symptoms (Xie, 2020). There is also no way for schools to dictate what students are exposed to at home. The school setting may potentially be the place in which something other than technology is offered as a means of entertainment. While the lack of supervision that we and many others enjoyed as children were not without risks, playing video games for several hours a day is also a risk to children's physical and emotional health (Frost, 2017). Importance of play and exposure to nature is crucial to the mental health of students.

As schools have resumed the in-person model, none of them have returned to the "pre-pandemic norm" involving technology use. The use of technology within classrooms, though vital for the digital era we find ourselves in, must be balanced with nature-based learning. Incorporating technology within nature would seem to be the easiest way to provide a balance for students. Students are adapting their learning to promote critical thinking, establish individuality, and are provided with the opportunity to gain experience through social interactions through group work, collaboration, and problem-solving strategies.

Motivators and Benefits of Nature-Based Learning

Promoting motivation for students is often a challenge for teachers. In schools, motivation can look like a field trip or being able to do something considered out of the norm. Nature-based learning, in the Arkansas public school setting, is out of the norm. Teachers using an outdoor classroom for any lesson is a motivation for students. It creates an energy of excitement and a hunger for exploration. Humans learn through experience and learning in a natural learning environment allows students to do just that. The outdoor education program must consist of activities planned and prepared

thoroughly by personnel and teachers who use the environment, nature, and direct experience in teaching and learning. It involves the process of learning by doing. All knowledge and experience will be obtained directly with the concept of "hands-on" of 'first hand' experiences (Harun, 2014).

The list of benefits of nature-based learning would take time to develop. Nature-based learning gives an entirely new meaning to holistic education. Students benefit socially, academically, physically, and mentally. The benefits of outdoor education can be categorized into cognitive (knowledge, understanding, academic outcomes); affective (attitudes, feelings, beliefs, self-perception); social/interpersonal (about others, involving communication skills, self-perception, and leadership); and physical/behavioral (fitness, skills, actions, and personal behavior) (Rickinson et al., 2004).

Nature-based learning also increases student participation in class and group collaboration. Critical thinking skills are increased and help students learn the value of self-efficacy. Outdoor learning drives a question, a critical approach to geography. Children are stimulated to ask questions, recognize and investigate patterns, and develop critical thinking skills. Being outside provides a real situation where geographical capabilities seem necessary and relevant (Asiyah, 2021). Play in outdoor environments enhances the learning environment, increasing children's creativity and improving their problem-solving and decision-making skills. Outdoor environments provide possibilities for more varied and less structured activities than indoor environments (Norling, 2015).

The importance of group-play and understanding social normativity are important for developmental growth as well. Observations of students on kindergarten and elementary school grounds show that natural areas encourage more play in small groups,

more gender-balanced playgroups with both boys and girls and more mixed-age play (Bell & Dyment, 2008; Lukas & Dyment, 2010). Excellent schools balance sedentary, structured, academic instruction with open-ended experiences in the world of nature, art, the humanities, and creative, productive play (Frost, 2017).

Separately, physical health is an entire benefit on its own. Fresh air and movement promote blood circulation to become easier in turn increasing cognitive functionality. With a need to invite physical health conversations and pro-active lifestyles into school environments, allowing students to go outside every day for simple exercise can have a major impact on their day. The emphasis is on the understanding and facilitation of outdoor activities, particularly with an emphasis on a non-competitive approach to skill development and as an option for lifelong participation in physical activity (Leather, 2020). In addition to social, emotional, and health benefits, green school grounds provide rich opportunities for environmental exploration and learning (Chawla, 2018). Risk assessments, when conducted thoroughly, may present apprehension when conducting nature-based learning. However, the risks do not outweigh the rewards that nature-based learning provides children.

Holistic Education Elements

The holistic development of children is formed by the combination of academic, social, emotional, and character development education. An integrated whole-child approach, indoor and outdoor playful learning, built and natural playgrounds, and hands-on projects must keep pointing the way to healthy and happy child development (Frost, 2017). Nature-based learning can take place in any outdoor setting, rural or urban. Inquiry-Based Learning (IBL) can increase the engagement of students, especially in a

nature-based setting. The opportunity for teachers to implement cross-curricular learning opportunities seems limitless. When IBL is commonly used in nature-based learning, holistic development is continuously enriched through various means. Exposing children to environmental responsibilities, service leadership, and the art of "doing good", educators are creating an avenue for students to learn selflessness, responsibility, and confidence. Primary school students can grasp the concept of place-based education which involves creative play and imagination engagement.

Professional organizations like the National Association for the Education of Young Children, the Association for Childhood Education International, the International Play Association, the more recently formed US Play Coalition, the Children in Nature Network, and the Association for the Study of Play, encourage whole-child development approaches that include free play and outdoor exploration (Frost, 2017). Friedrich Froebel—an influential 19th-century German scholar who recognized the uniqueness of childhood, created materials for playful learning, and coined the term kindergarten emphasized the role of the garden and the importance of nature in development (Frost, 2017).

By introducing students to a holistic view of the planet, life on Earth, and the emerging world community, as a "context of meaning," holistic strategies enable students to perceive and understand the various contexts which shape and give meaning to life (Clark,1991). Education is not simply memorizing and regurgitating information provided through a textbook or a lecture. For us to gain a better tomorrow, children must be educated through a holistic approach. The social element of education is a vital part of educating the whole child. Establishing normal socialization and interaction between

students will only benefit them in later educational experiences and in adulthood. Having a sense of community and belonging is an important part of human nature. Outdoor learning environments can help students communicate with their peers, understand others, work together democratically and towards common goals, develop community awareness, and understand their own place in the world (Görkem, 2020).

With concerns about nature-based learning built around intimidation, lack of experience, and little research, Arkansas is currently lacking in the application of nature-based learning. By presenting the perceptions of current nature-based educators, K-12 classrooms can see the value of educating the whole child by incorporating nature-based learning in everyday practice.

Theoretical Framework

As the theoretical framework is not limited to one theory, it is relevant to note that Inquiry-Based Learning is the primary theory that this research is supported. Several concepts, such as the inclusion of environmental and holistic education being incorporated into daily learning experiences are present throughout the literature. John Dewey, the father of progressive education, presented the theory of Inquiry-Based Learning (IBL). Inquiry-Based Learning is comparable to student-centered learning and project-based learning. IBL is an instructional practice where students are at the center of the learning experience and take ownership of their own learning by posing, investigating, and answering questions (Caswell & LaBrie, 2017). IBL is comparable to student-centered learning and project-based learning and engages students on multiple cognitive levels at any given time.

Nature-based learning embraces IBL as it stands for problem-solving and learning through experiences, and allows students to become critical thinkers through play and learning in the outdoors. Outdoors, in rich natural landscapes, children can learn many important academic and life lessons. They can learn where food comes from and how it ends up on their table, they can learn about the relationships between humans and nature, and they can see a variety of natural processes. By creating engaging landscapes in which children can learn and play, landscape architects have the opportunity to get children more active and engaged with the nature and communities around them (Pigott, 2012). In the social and cognitive domains, teaching inquiry requires engaging the students in collaborative tasks that involve reading, asking questions, planning the means to enable answering the questions, collecting, and interpreting data, drawing conclusions, and offering new understandings (Tal, 2019).

Overall, IBL is a progressive approach to education that embraces the genuine art of learning through discovery. Students are expected to work collaboratively to identify how to solve a problem, gain research skills, and trade-off capacity (Avsec et al., 2014). IBL allows the classroom teacher to serving students as a facilitator of learning. Students are adapting their learning to promote critical thinking, establish individuality, and are provided with the opportunity to grow through social interactions through group work, collaboration, and problem-solving strategies.

The holistic development of children is formed by the combination of academic, social, emotional, and character development education. Nature-based learning can take place in any outdoor setting, rural or urban. IBL can increase the engagement of students, especially in a nature-based setting. The opportunity for teachers to implement cross-

curricular learning opportunities seems limitless. When IBL is commonly used in nature-based learning, holistic development is continuously enriched through various means.

Conclusions

The literature review presents significant findings. The relationship with previous research on NBL is connected to this study by establishing an understanding of how the overall benefits of NBL can allow educational stakeholders to notice how impactful something as simple as having class time in a natural setting can be for students. Major themes, such as technology use, holistic education, curriculum influences, and simple motivation, throughout the literature prove that this research is relevant to the current educational practices in place.

With further investigation through observations, interviews, and the combination of the literature review, the study shows valid information that can allow educational reform to take place. The study also shows the need for professional development opportunities that Arkansas teachers desperately need, if teaching in a nature-based setting is something that is to be pursued.

Chapter III: Methodology

The purpose of this qualitative case study was to explore the perceptions of practicing nature-based educators and to find how classroom educators can become fluent in providing students with opportunities to gain experience in nature. Other key elements within the study also explored how nature-based learning offers a holistic education approach, along with an examination of the overall impact of nature-based learning.

Qualitative data collection involved personal interviews with teachers and non-traditional educators currently implementing nature-based learning activities. Data were also collected through field observations and document analysis. Multiple field observations allowed the researcher to experience real-time interactions between educators and school-aged students. Interviews were conducted through various means including virtual, and electronic.

The target population in this qualitative study was defined as teachers that have experience leading nature-based learning activities. Multiple age groups were observed during classroom field trips and classroom observations. The remaining elements of this chapter include a discussion of the research question, the research method, the research design, population and sample selection, instrumentation, data collection, and the final data analysis.

Research Questions

The following research question guided this qualitative study: What are the perceptions of nature-based educators regarding the value of incorporating nature-based learning into the overall Arkansas K-12 curriculum? This research question was explored by using the following interview protocol to probe these educators for answers.

Research Design

The research methodology and data collection are a clear representation of qualitative research. A researcher that selects a qualitative research method collects open-ended, emerging data that is then used to develop themes. This method allows for a study of an exploratory nature (Campbell, 2014). A simple description would be that qualitative research considers why individuals think or behave the way that they do and how they come to understand these complex thoughts and actions within their lives (Denny, 2019).

More specifically, methodological triangulation was used to include multiple elements of research to supply perspectives. Methodological triangulation refers to using more than one research method in measuring the same object of interest, for example using participant observation as well as questionnaires (Oppermann, 2000). Qualitative inquiry includes collecting quotes from people, verifying them, and contemplating what they mean (Patton, 2002).

The nature of this study was qualitative and combines elements of research through qualitative means. The primary research centers around the literature review, interviews, and observations. Data collection in a phenomenological study includes but is not limited to documents, interviews, and observations (Tomaszewski et al., 2020). Being able to enter an established nature-based learning environment provided this study with tangible experiences that are reported on. While quantitative approaches can tell us about the frequency of occurrences and explore causation and association, qualitative research is more able to examine the reasons why phenomena happen, and how people understand and interpret the world Gooberman-Hill (2012).

Personal interviews with current nature-based educators allowed the study to hold its validity as it expresses individual experiences and genuine field applications. In addition to the interview(s), researchers should also take field notes (reflexive journals) about the interview situation interaction to include relevant details for the transcription (Esin et al., 2014; Reissman, 2005). This research design was best suited for this study as it uses triangulation and presents data through literature, interviews, and field observations. This research cannot be conveyed through surveys or other quantitative means, therefore, following the criteria for qualitative investigation is required.

Setting

The setting of this study took place within the state of Arkansas, more specifically within current nature-based education settings. Two primary observation locations were observed including The Kessler Mountain Nature Center and Outdoor Classroom in Fayetteville, Arkansas, and The Willow Roots Learning Center in Conway, Arkansas. The community being studied at these locations have similarities and differences. The Kessler Mountain Nature Center and Outdoor Classroom works with the Fayetteville Public School system to provide a nature-based learning experience for multiple grades and focuses on field trips. The grade observed and represented in this study is 3rd grade.

The Willow Roots Learning Center is composed of children of multiple grades and ages and currently provides education for kindergarten through eighth grade. It will continue to add grades each year as students move up. Both locations are surrounded by a natural setting and are able to provide curricular structure.

The invited sample of participants for this study includes traditional and non-traditional educators that are actively teaching in a nature-based education organization

or school. Individuals that were not qualified to participate in this study included anyone that was not a nature-based educator. The purposive sampling method which required participants to meet specific criteria is used as the sampling method for interviews. It is appropriate for this study as it allowed the researcher to require specific criteria for interview candidates to hold.

Sampling

The 13 educators were contacted through email to discuss the study and the need for interview participation. Three males and 10 females agreed to participate in this study, all of whom currently play various roles within a nature-based education setting. This study required the input of experienced nature-based teachers to show the benefits, challenges, and experiences of nature-based learning and also, how current trends in nature-based learning are successful.

Table 1

Participant Descriptions

Participant 1	White Male	Environmental Specialist and Nature-based Education Volunteer
Participant 2	White Male	Environmental Specialist and Nature-based Education Volunteer
Participant 3	White Male	Environmental Specialist with Fayetteville Public Schools and Nature-based Education Volunteer
Participant 4	White Female	Environmental Specialist, Master Naturalist, and Nature-based Education Volunteer
Participant 5	White Female	Retired Public School Teacher (50 Years of Service), Master Naturalist, and Nature-based Education Volunteer
Participant 6	White Female	Nature-based Kindergarten Educator
Participant 7	White Female	Elementary Public School Teacher (13 years), Private School Teacher (4 years), Nature-based Elementary Educator

Participant 8	White Female	Pediatric Occupational Therapist, Nature-based Preschool Educator
Participant 9	White Female	Pediatric Occupational Therapist, Certified Dyslexia Specialist, Nature-based Educator
Participant 10	White Female	Nature-based Elementary Educator
Participant 11	White Female	Nature-based Elementary Math Educator
Participant 12	White Female	Co-Founder of a Nature-based School and Nature-based Educator
Participant 13	White Female	Co-Founder and Administrator of a Nature-based School and Nature-based Educator

To acquire subjects for this study, the researcher researched current, functioning nature-based organizations in Arkansas. After collaborating with the Community Engagement Coordinator at the Kessler Mountain Nature Center and Outdoor Classroom and the Co-founder and Administrator of the Willow Roots Learning Center, the researcher confirmed observation dates and interview participants. Connecting with potential interview candidates through phone calls and email to establish an acceptance or declination of potential observations and interviews. Candidates that accepted the invitation to interview worked with the researcher to schedule appropriate dates and times for observations and interviews. Participants were provided with a list of questions as they completed the IRB consent forms.

Data Collection

This study employed multiple sources of data. The instruments included databases, interviews, and observation guides. The focus of this study's data collection was the perceptions of nature-based educators. The three components aligned with this study included observations, interviews, and literature analysis. Data from observations and interviews took place in December 2022 and the Spring of 2023. IRB protocol and

ethical considerations were consistently reviewed and applied during the research process.

The researcher sent reminders to the interview candidates one week prior and one day prior to the scheduled interview. On the day of the interview, the researcher communicated with the participants confirming the interview. The researcher set up the virtual meeting and upon the scheduled time, had the participants introduce themselves and how they are currently connected to nature-based education and the professional experience they have. The interviews were recorded for the transcription process.

A minimum of 13 interviews were conducted in person and virtually. This study combined data from interviews that were from experienced nature-based educators. For the study to hold value, it is important to view experiences from educators that are currently practicing nature-based learning to show a genuine process of educating in nature, the challenges, and advantages it holds, and how nature-based learning provides multiple ways to enrich holistic education for children.

Participants were eager to join the conversation and research for this study. Multiple interview questions were presented to the interviewees before the interview and there is a consideration for extending the questions during the interview, depending on the course of content. Interviews were scheduled for 40 minutes. After the interviews were completed, the research took the interview responses and transcribed them. This process took roughly one week. After the process was complete, the research then coded similar interview responses and established a coding system for each interview questions. Through this, common themes and peak interest points developed, ultimately creating the themes and subthemes described in this study.

Observations were held during the winter of 2022 and spring of 2023 in Arkansas. Two nature-based learning facilities agreed to provide observation opportunities for data collection. The Kessler Mountain Nature Center and Outdoor Classroom of the Northwest Arkansas Land Trust, and the Willow Roots Learning Center are two facilities that operate daily with nature-based education at the center of their missions.

The Kessler Mountain Nature Center and Outdoor Classroom is a community-based facility established in an old smokehouse. The museum-like setting creates a perfect indoor option for educators to provide safe, nature-based learning for students of various ages. This facility focuses on field trip options for the local school district. During observations, the weather proved to be challenging, however, the educational and nature-based leaders at Kessler provided clear evidenced of creativity and flexibility.

Each leader went with the flow, and welcomed the hectic transitions from going indoors to outdoors, and vice versa. As each leader has his or her own skill set and specialty in nature-based education, the flow of each lesson developed more and more with each student comment and leader input. The overall collaboration between the students was impressive and insightful. The way each leader managed each student individually, and then as a whole group, was impactful because it was easy to see that even though they are not typical classroom teachers, they understand classroom management.

During the outdoor lesson, students were eager to participate. Some students had a challenging time remembering the norms of being outside. The classroom teacher served as a facilitator and students were able to view nature from an educational stance, rather than recreational. The engagement level that students had was off-the-charts. Students

were charged with finding something in nature that they had never seen before. The experience that is most memorable is when students began finding leaves and noticing the veining, the different shapes and colors, and some that had larvae on them. The amount of conversations that something as simple as leaves provoked is impressionable.

The Willow Roots Learning Center has been operating for two years and provides education for kindergarten through eighth grade. With a new kindergarten group added each year, the learning center continues to grow. The learning center is focused on project-based learning, student-led education, and is anything but the typical, four-wall classroom.

The absolute goal of student-center, and project-based learning is present at Willow Roots. During the observations, it was noticeable that the concept of education mixed ages at one time is manageable. Some of the students were researching individual space topics, and the day before my observation, NASA had spotted a solar tornado on the Sun, and the students were eager to learn more. One nature facilitator used a video to share the image of the solar tornado and that opened so many doors for science topics to flourish.

As the students are in nature most of the day, it was easily gathered that Willow Roots is a learning center that promotes individual student success, and that the talents of each student are focused on. The center also provides community-based enrichment on Friday's. During the observation time, a local farmer was able to bring in seeds and the materials for each student to plant flowers and vegetables. This activity was completed by a younger grade, and the farmer discussed with the class the multiple parts of a plant, and what all we can use plants for.

For both locations, parental involvement was relevant. The Willow Roots Learning Center took a field trip to the local planetarium. Parents were required this field trip, as the school does not own a mean of transportation. The Kessler Mountain Nature Center and Outdoor Classroom had multiple parents involved with the school field trips. The parents were helpful, and curious of the curriculum that Kessler offered.

Ethical considerations were taken at every point during this study. Before interviewing, the researcher gained consent from the participants, and provided all items required by the IRB to the participants. The participants throughout the study are referred to with numbers and a descriptive table to show each participant's credentials and are not identified with his or her name due to the rapport gained throughout the study. Interview transcripts and records pertaining to this study were kept safe, in locked cabinets, to ensure the safety of interview responses. Upon the completion of this study, all records, including interview transcripts and forms, will be destroyed with a paper shredder and recycled.

Multiple databases were used as research instruments. Combined with interviews and observations, the triangulation is centered around nature-based classrooms and learning. The collection, review, and analysis of documents, primarily scholarly journals and books will supply ample data for the research to present its findings. ProQuest Central, being used thus far in the research, has supplied exemplary documents to support this study.

Instruments

For this qualitative study, the instruments used for data collection included interviews, observations, and literature reviews. The research questions were created with

the understanding that nature-based education is not a requirement in Arkansas, and that there is a need for more nature-based learning opportunities within the school setting.

Interview Questions

The following research question guided this qualitative study: What are the perceptions of nature-based educators regarding the value of incorporating nature-based learning into the overall Arkansas K-12 curriculum? This research question was explored by using the following interview protocol to probe these educators for answers:

a. What is your experience in teaching in a nature-based or outdoor classroom environment?
b. What nature-based learning professional development or training, if any, has been provided in your organization?
c. When students are observed in a nature-based learning environment, is there a noticeable difference in academic and social motivation versus in the typical classroom setting?
d. From a teacher's perspective, how could specific learning approaches, such as cross-curricular activities, be implemented into a nature-based learning environment?
e. What are some advantages of nature-based learning?
f. What are some disadvantages of nature-based learning?
g. Since COVID-19, what social, physical, cognitive, and emotional differences are noticeable in children and what are ways that nature-based education can impact these elements?
h. What does administrative support currently look like in nature-based education?

i. Is there any funding or grants, that you know of, available for establishing or improving existing nature-based classrooms?

Trustworthiness of the Data

Sandelowski (1986) and Patton (2002) suggest that trustworthiness requires establishing that findings are dependable, relevant, and congruent – reflecting a researcher's intended reality that is obtained from the perspectives of those who provided data. Establishing trustworthiness is vital for qualitative research to hold any weight. Data collected and represented shows credibility through peer debriefing, triangulation, extended participation, and continuous observations.

Peer debriefing is the continuous process of peer review and constructive criticism. Triangulation will also be used to establish credibility. More specifically, methodological triangulation is used to include multiple elements of research to supply perspectives. Methodological triangulation refers to using more than one research method in measuring the same object of interest, for example using participant observation as well as questionnaires (Oppermann, 2000). This study combined interviews, observations, and document analysis to create triangulation. Extended participation ensured that the researcher actively participated in observing each nature-based classroom more than once to take genuinely transparent notes on two or more separate occasions. Providing transparent results contributes to the study's credibility. Finally, continuous observations began in the winter of 2022 and continued throughout the year. Ensuring that observation locations are relevant and that the time spent in any given observation location is long enough to produce clear notes that were transcribed for the study is significant.

Researcher Reflexivity

Reflexivity is a process that challenges the researcher to explicitly examine how his or her research agenda and assumptions, subject location(s), personal beliefs, and emotions enter into their research. It is imperative for qualitative inquiry because it conceptualizes the researcher as an active participant in knowledge reproduction rather than as a neutral bystander (Gluck & Patai, 1991; Hammersley & Atkinson, 1995; Smith, 1987).

After my seventh year of teaching, I realized that I needed a different form of professional development than what was being offered locally. As my lineage is deeply connected to Scotland, I sought professional development opportunities at the University of Edinburgh. It was there, in the summer of 2017, that I completed my first outdoor education training. The environmental setting, historical elements found throughout the city, and impressive colleagues that shared the journey with me opened my eyes to a need that is very much essential in our state. Growing up surrounded by trees and outdoor activities, I frequently notice teaching opportunities in nature. Finding appreciation for the balance between the natural world and the hustle and bustle that our society lives in, is a challenge that I hope to present in this study.

As a K-12, public school educator of 14 years, the experiences that I have in general education and special education classrooms are welcomed in this study. After attending the University of Edinburgh and completing a short course in outdoor education, my passion for this study only developed more. Working with children in a preschool setting throughout my current position as an Education and Early Childhood Education Instructor at the University of Arkansas Community College in Morrilton has

allowed me to notice the need for a nature-based learning curriculum to be enhanced and implemented within the State of Arkansas. As a member of multiple organizations that are centered around nature-based and adventure learning, I have access to many resources and individuals willing to discuss and collaborate on the advancement of this study.

Naturally, my biases include multiple factors. One factor is my knowledge of and experience with the implementation of teacher practices in a nature-based setting. As someone that is comfortable with cross-curricular development, risk assessment and management, and nature-based lesson planning, I know that I will have a bias on how positive nature-based learning is. With the acknowledgment of known biases, as a researcher, I must remain open-minded to new perspectives and methodologies. Understanding that not everyone will share the passion for nature-based learning as I do, but the goal of this study is to shed light on how beneficial and attainable nature-based learning is for students and teachers. The personal and professional experiences that I have had will allow me to collectively present research on a topic that I am enthusiastic about and one that can change education and educational practices that are currently in place. To make this study hold validity, I will present findings on genuine perceptions of nature-based educators in hopes of sharing the multiple aspects of nature-based learning.

Data Analysis

As triangulation is the data analysis method, this study presents data from interviews, observations, and documents collected and reviewed from multiple databases. The study employs multiple data analysis techniques including within-study literature analysis, between-study analysis, constant comparison analysis, theme analysis, and qualitative comparative analysis.

A within-study literature analysis involves analyzing the contents of a specific work. In its most rigorous and comprehensive form, a within-study literature analysis does not merely involve analyzing the findings of a study or the major premise used in a non-empirical work (Onwuegbuzie et al., 2012). Onwuegbuzie et al. (2012) suggest that a between-study literature analysis involves comparing and contrasting information from two or more literature sources. Constant comparison analysis Systematically reducing source(s) to codes inductively, then developing themes from the codes. These themes may become headings and subheadings in the literature review section (Leech & Onwuegbuzie, 2008).

Theme analysis was collectively used after interviews were completed. Research by Leech and Onwuegbuzie (2008) supports that theme analysis involves a search for relationships among domains, as well as a search for how these relationships are linked to the overall cultural context. Research by Leech and Onwuegbuzie (2008) proposes that qualitative comparative analysis involves systematically analyzing similarities and differences across sources, typically being used as a theory-building approach, allowing the reviewer to make connections among previously built categories, as well as to test and to develop the categories further.

Summary

To conclude, the purpose of this qualitative phenomenological study is to explore the perceptions of practicing nature-based educators and to find how classroom educators can become fluent in providing students with opportunities to gain experience in nature. Other key elements within the study explore how nature-based learning offers a holistic

education approach, along with an examination of the overall impact of nature-based learning.

The research instruments include databases, interviews, and observation guides. The center of this study's triangulation is the perceptions of nature-based learning educators. The three components aligned with this study include observations, interviews, and literature analysis. A minimum of 13 interviews were conducted to establish the validity of the need for nature-based learning and to prove the lack of use of nature-based learning in Arkansas. Interviews were conducted in person, virtually, and electronically.

Observations were conducted in currently operational nature-based classrooms currently operating in Arkansas. Multiple databases were used as research instruments. Combined with interviews and observations, the triangulation is centered around nature-based classrooms and learning. The collection, review, and analysis of documents, primarily scholarly journals and books have supplied ample data for the research to present its findings. ProQuest Central has supplied exemplary documents to support this study.

Data for this study were collected over the term of three months. Documents gathered from the summer of 2021 through the spring of 2023 were gathered, evaluated, and if relevant, placed within this study. Observations were held during the winter of 2022 and spring of 2023 in Arkansas. The observations were conducted at the Kessler Mountain Nature Center and Outdoor Classroom and the Willow Roots Learning Center. Interviews were conducted with 13 participants that met specific requirements and the perceptions of practicing nature-based educators that agreed to be interviewed were vital for this study.

IV. Findings

Nature-based education is lacking within classrooms throughout Arkansas. The research results prove multiple elements surrounding the issues that remain unsolved. The perceptions of current nature-based educators have shed multiple insights on the advantages, disadvantages, conclusiveness of nature-based education and what it provides for students. The purpose of this qualitative case study is to express the perceptions of practicing nature-based educators and to find how classroom educators can become skilled in providing students with opportunities to learn in nature.

Throughout the interviews and observations, common themes arose and are further noted. The interviews allowed seven themes to develop, however, those themes are sub-themes within the research. By presenting the perceptions of current nature-based educators, K-12 classrooms can see the value of educating the whole child by incorporating nature-based learning in everyday practice.

Undoubtedly, the research indicates that current nature-based educators are expressive about two primary elements within their work. The first element that is present is the overall difference between nature-based education and the typical classroom setting. The second element that is present represents the current trends that are noticeably hindering the progression of nature-based education in Arkansas.

Themes

Learning Atmosphere Differences

The overall differences between nature-based learning and the typical classroom setting are obvious to nature-based educators. According to nature-based educators, the factor of student focus and motivation is enhanced. Motivation and focus are challenging

regardless of age, and multiple factors contribute to that development such as maturity. One contributing factor that helps motivation and focus is allowing students to experience a sensory output. Participant One stated that focus is more manageable in the outdoors due to the different sensory elements available. Another way to promote motivation and focus is to give students an opportunity to decompress and relocate their energy. Participant Four suggested that being outside does give students a chance to disperse some of that energy.

According to nature-based educators, students have more positive interactions with peers, socially and emotionally. Holistic education not only includes academics but also social and emotional growth. Students are more apt to participate in a setting that is uncommon to them. Participant Four argued that there is a difference completely. And I think that the sharing opportunity that they have is what helps that social motivation. Participant Eight claimed that social and emotional learning is the main thing within younger age groups and that a play-based program that prioritizes social and emotional learning in nature is sacred and healing for children. In addition, the flexibility that nature-based education can allow students to experience learning with different age groups that are learning at various levels.

Participant Nine also mentioned how flexibility is a key component in growing social and emotional:

> In nature-based learning, there is more room for child-led and interest-based learning. Therefore, academic, and social skills are developed more organically. The day is guided by the teacher, but pivoting can organically occur depending on the interest of the child. Additionally, with less structured time,

social and emotional skills are constantly being developed as children are allowed time throughout the day to create relationships.

There is also a difference in the confidence that students express with nature-based education. Participant Six claimed that problem-solving, engagement, and confidence in academics within the outdoors contribute to student motivation, social-emotional health, and friendships. Participant Eleven provided that in nature-based learning, students are exposed to exponentially more social-emotional skills and situations than typical classroom students. They are expected to work together, lean on each other, and be able to respect the boundaries of people and of our school space.

According to nature-based educators, there is a greater opportunity for student-led learning, problem-solving, and self-discovery. This item alone connects to the theory of inquiry. Participant Two stated I have noticed that students start to unlock learning tools that they did not know that they had in the classroom, as in self-discovery. Participant Eleven claimed that students have an expectation to learn at their own pace and in their own way and that nature-based education is child-led and whole-child-focused. Participant Two claimed that there is so much we can observe in nature and then we give the students the freedom to self-explore.

According to nature-based educators, the final element noticed is that overall student engagement is higher due to more excitement for learning. Nature-based education allows students to be expressive, share opinions and discoveries, and learn in an atmosphere that they have yet to discover. Participant Three stated there are students that struggle in a classroom setting that tend to blossom and the outdoor setting and that engagement generally is much higher. Participant Four indicated that students get to

discover things in the classroom, but they discover things outside and there is something different. It is an intangible concept. It is different in that it is more like their discovery.

It is human nature to experience new feelings in a location that is not known. Nature-based education provides the excitement of learning and discovery for students. The unpredictability of nature secures constant curiosity and questioning. Participant Two claimed that a goal of nature-based education is to light a fire and get that excitement, that joy of learning, and comfort in the outdoors. Participant Ten commented that the biggest advantage of nature-based education is the way it safeguards messy, unstructured, organic play as a real and valid learning technique. Playful childhood is not sacrificed for curriculum and instruction; it complements it.

Participant three also revealed that managing student engagement for longer periods of time can become challenging:

> Having worked in settings where we are bringing the science curriculum indoors, maintaining engagement, for a lot of students, for longer periods of time is really challenging. When we take the students outside and give them permission, and some support to explore, the engagement just goes to the roof, and we are able to really experience these concepts firsthand.

Comprehensive Advantages of Nature-Based Education

Nature-based education finds a balance in contributing to the physical, academic, social, emotional, and character development of children. In turn, providing a sound education for the whole-child experience. The advantages of nature-based learning undeniably outweigh the challenges that it presents. In this component of nature-based

education, research participants give insight into the benefits of nature-based education and how they are used within the educational setting.

An educational setting that can provide the whole-child learning experience creates an open space for individual student growth. Participant Twelve stated that there are truly countless advantages of nature-based learning. Social, emotional, fine and gross motor skills, sense of well-being, eyesight, tracking skills, core strength, resilience, confidence, life skills, and overall health is supported and improved through nature-based learning. Participant Three suggested that self-awareness and experiencing childhood are connected with nature-based education:

> The other thing is some of the more fundamental aspects of being a child and checking in with what is easy to take for granted such as the benefit of moving around. Putting our students in a situation where they need to be aware of equipment or surroundings, for example, or learning to navigate a rocky terrain, the opportunity to really build some gross motor development for especially younger students in elementary school is present. A lot of students benefit from that opportunity to really get out and be away from some of the guardrails that we built around their school experience.

Nature-based education also provides a refreshing stance on meaningful learning and new skill development. The environment, itself, gives students limitless opportunities to connect previously learned skills to an unfamiliar environment. Participant Thirteen shared that nature-based education encourages curiosity and therefore critical thinking skills, and resiliency is built. Participant Seven noted that in nature-based learning, there is enrichment in everything. Participant Nine claimed that nature-based learning allows

for firsthand learning and that people learn best through doing. It is much easier to remember new skills when we actually do them rather than just read or hear about them.

The component of spontaneous learning provided in nature-based education promotes enjoyment, engagement, and a life-long learning mindset. Today's students require motivation and intentional learning opportunities that spark curiosity. The element of surprise that is noticed in nature give students a teachable moment at unpredictable times, forcing students to stay alert and engaged. Participant Four stated:

> There are so many unexpected opportunities. Learning in the outdoors is unscripted, unexpected, and spontaneous. It does not have to come from me. It can come from the students and when that happens, that is just magic. In the outdoor classroom, we set up a kind of role-play where the students become a scientist. Here are our observational tools, and here is the skill set that we are trying to develop and so, they are charged with observing, and then we take what they observe and turn it into a lesson. I think that is really powerful learning.

The numerous health benefits available through nature-based education are astounding. Physical, mental, social, and emotional health are all assessed and developed in a natural environment. Students are physically active, and fresh air allows for mental clarity. Mental clarity enables students to engage in stress reduction and promotes an overall sense of well-being. Participant Eight claimed that children are able to naturally be more physically active and that nature-based education provides inclusion and accessibility to children of all abilities. Participant Nine stated that in nature-based education, students are sitting for short periods of time. She also suggests that being outdoors provides

students with fresh air and in turn, students have lower anxiety and can regulate stress easier.

Some classrooms consistently promote environmental education, but not all of them. The element of students becoming stewards of the earth and learning to appreciate and care for the natural environment is a benefit in itself. Participant Thirteen revealed that becoming stewards of the natural world and learning to care for their planet in a way most people do not have an opportunity to is a contributing element to the future life of our planet. Participant Five mentioned that a major advantage of getting students into nature-based learning is to get them involved in saving our planet.

Cross-Curricular Connections

The importance of allowing students to experience cross-curricular connections is vital. Having the ability to relate something learned in a specific subject and then understanding how it is embedded within other subjects creates a partnership for creativity, critical thinking, and collaboration to thrive. Nature-based education creates endless occasions for teachable moments to happen. Whether students notice something that relates to a topic being taught, or a teacher expresses the connection between two concepts, cross-curricular activities organically live in nature. Participant Two suggested that a creative, intentional curriculum can be created and have multiple influences.

> A priority for us when writing this agile educational curriculum is how can we implement math skills and English right into our programs. We do that directly with our fossil lesson plans where we sit with the students and read the facts. We are using the curriculum from their classes, and we ask "How do we use adjectives correctly? What is the proper noun?". We can use adjectives to

> describe our feelings about nature and implement those literary skills into the nature center, which is great and teachers love it. Teachers find it to be really beneficial for them when they get back to the classroom and they are able to implement our curriculum into their English curriculum.

Participant Thirteen added that oftentimes when we are out in nature learning, so many different topics are able to be tied in at once. Writing letters in the dirt (fine motor skills/sensory and literacy) could lead to finding a caterpillar in the dirt and talking about the life cycle of a butterfly and metamorphosis (science), which leads to counting how many dots are on the caterpillar's back (mathematics), all within a few moments.

Providing cross-curricular experience is even accessible for older students. Participant Four claimed the AP (Advanced Placement) students that come in, they use math. They do statistical things with the elements found in nature. We do a lot of cross-curriculum. Whenever we can pull in another area of learning, we do it. We take that as an open opportunity. Participant Five stated, of course, elementary teachers are lucky in that they can totally tie together subject areas with an outdoor activity. One of the beauties of nature-based education is that it is appropriate and attainable for students of all ages. It also gives way for multiple age groups to work together.

Learning in a nature-based setting allows students to become responsible leaders in their own learning. It creates an atmosphere of multiple curricular connections, allowing students to relate past knowledge to new knowledge. Participant Seven suggested that in nature, most things are cross-curricular. Nature allows students to use knowledge in writing, predicting, exploring, and analyzing. Participant Ten claimed that the natural environment promotes motivation and teaches lessons.

She added that nature-based environments lend themselves perfectly to cross-curriculars because nature itself is so interconnected. The environment itself is a lesson on incorporating diverse parts, connecting and expanding one subject with another. Experiential, multisensory learning al dovetails perfect with a nature-based environment as students are encouraged to observe, explore and responsibility interact with the landscape and the creatures who call it home. Participant 12 also claimed that nature is the perfect location for cross-curricular activities. Nature is math, language, art, and science. It is the blank or visually overstimulating classrooms where the challenge lies.

Overturning the Aftermath of Covid 19

The Covid 19 pandemic forced schools to close for an entire nine weeks. Returning the next school year still gave way to an abnormal learning environment for students. Many students completed their schoolwork virtually, while others that attended school, ran the risk of being quarantined due to close proximity with a student that had a positive Covid test, or worse testing positive themselves. The effects of Covid 19 will be noticeable for generations to come. The education system made choices that were best for the schools and students. However, the aftermath of the pandemic is very much present today. Nature-based education provided an outlet for communities and schools during the pandemic. Participant 5 stated that more students are deficient in reading since Covid 19. Many students also seem to have a harder time focusing and staying on task for an extended period of time. Being in a nature-based program seems to help address these issues.

Issues that current educators are noticing today are relevant for this study simply because they can be improved with nature-based education. The obvious academic gap that was created through the pandemic is by far the item that most schools are concerned with. However, the emotional, social, physical, and behavioral issues are equally as important. Participant 1 stated that reading and writing skills, following basic social interactions, and inactivity is a noticeable issue. He also claimed that nature-based education allows students to express an idea without feeling the pressure of perfection that they may feel in a classroom, and that nature-based education seems to eliminate the cliques that are formed at school because everyone is usually experiencing any given natural environment for the first time together. Participant 3 provided current trends noticed within the classroom and how nature-based education can improve those issues:

> I think we are still reckoning with the effects of Covid 19 with our students. There is the loss of learning that has come up quite a bit around student testing performance, demonstrating that literacy levels are not where they should be or used to be. What I have seen in my work is that in addition to academic loss, some of the behavioral and social emotional impacts. Some students really lost a lot of opportunity to learn how to interact with peers and that isolation has really damaged their social skills. The indoor portion of our program has a lot of that academic experience with reading and the writing. Sharing, working together, and collaboration, students since 2019 really struggle with just this simple stain. It really seems like the prevalence of that behavior has increased. Nature-based learning can really provide a solution because when we talk about learning through struggle or challenge, the outdoor setting really provides those

> opportunities. It is a wonderment that it captures basic child development, curiosity and a high rate of engagement is really critical to getting back to where it needs to be.

Participant Nine suggested that screen time has also become a relevant concern due to the physical issues it can cause and that it has also had a negative impact on social and academic motivation:

> Children missed several months of school and were attempting to learn virtually through a screen, this does not create a learning environment that is engaging or motivational. Additionally, with not being able to go to school and isolation restrictions in place, social skills and relationships naturally were negatively impacted. Extra-curricular activities were paused and fear of spreading germs was instilled which resulted in families staying home rather than engaging in physical activities. Nature-based education addresses all the above areas. The are outdoors a large majority of the day which is positively impacting their physical and emotional health. Lastly, they are working together through project-based learning as they further improve their social skills.

In addition, Participant 12 claimed that getting kids in nature is imperative to combat the anxiousness and reduced attention span associated with significant screen time. Another hopeful element regarding nature-based education and the pandemic, is that nature allows continuous social growth. For many, being isolated cause physical, mental, and social issues. Even during quarantine, people were able to connect outside and reap the benefits of connectedness. Participant 4 elaborated on this element:

> The ones that were not able to do outdoor school, they also missed out on field trips. There were no field trips really for them unless they were home schooled or attended an outdoor school. The re-institution of field trips just shows joy. Kids seem very happy to be outside in a group learning. A positive is that there are many more schools in our area that have outdoor places for their kids to go. During the pandemic, it seems like nature has protected us from ourselves. With nature-based education, kids get to be exposed to nature and it created a safety net for whatever comes in the future. They should not be afraid to go outside. They should be able to go out and embrace nature comfortably because there could be another pandemic. Being able to connect with other people outside, during the pandemic allowed human connectedness to continue.

The second primary element that developed within this research is the current trends that are noticeably hindering the progression of nature-based education in Arkansas. The collected perceptions of current nature-based educators provided three common themes within this element including: the challenges presented in nature-based education, training and professional development opportunities, and administrative support.

Challenges Presented in Nature-Based Education

As with anything in education, advantages are accompanied by challenges. The challenges that often occur in nature-based education can usually be prevented with a risk assessment, basic knowledge of nature, and willingness to grow through being uncomfortable. In addition, seeing nature-based education with a “deprogramming” of societal norms is also a challenge.

Primarily, establishing safety and clear boundaries is vital to any educational process regardless of location. Educators, even typical classroom teachers, are used to addressing safety issues within any school. Tornado drills, fire drills, and active shooter drills are three major safety elements that have specific procedures that a teacher knows and is able to apply at any given time. Smaller concerns such as a student accidentally cutting a finger with scissors, or wearing proper lab protection in a science class are equally as important. The same risk assessment process is taken with nature-based education; however, it takes time to establish the development of this practice. Participant 1 stated that developing safety and comfortability for students in nature-based education can be tricky, but can be improved with time and practice.

There are also beneficial lessons that can be investigated by presenting our students with risks. Taking risks and learning through that process can develop life skills and critical thinking skills. Participant 10 stated that the closeness to nature's less beautiful inevitabilities such as wet clothes or shoes, coldness, heat, bug bites, and dirtiness can be a challenge, but uncomfortable moments aid in strengthening resilience and adaptability. Participant 3 elaborated on this concept:

> There is risk involved. I think we understand the need to provide our students with the ability to take some risks. Risk assessments create a place where students are able to experiment and do so safely. Not every student is bringing the baseline of confidence, emotional development, behavior, and cognitive growth, so we always run the risk of putting students in a situation where they are not safe for that particular student. Outdoor education and nature-based learning is really powerful in that you can differentiate by allowing them to find their way of

connecting with it. At the same time, we have to be very aware of the fact that what may be easy, normal, and approachable for one student may be an insurmountable barrier for another. Making sure that all students have access to nature-based learning is really important.

Another common theme that developed was the issue of unpredictable weather and natural elements. Even with modern technology, weather can change without much notice. Participant Nine mentioned that without the right clothes, the weather can be problematic. Participant Four stated that the most obvious thing would be the weather. We addressed that in a couple of ways, and we have an abbreviated programming for foul weather. We also have slickers, and extra clothing like coats and gloves for the kids to go out in.

A final challenge revealed through this research is the concept of current social norms and the outward impression of nature-based education. Due to the lack of knowledge most members of society have, nature-based education is usually represented as anything but education. The format of nature-based education is different and the priorities are not solely built on preparing for a standardized test. It defies the robotic format that is ever present within the education system. Participant 11 claimed that based on social norms, students at nature-based learning centers are look at as “behind”, or just not learning what they need to be learning. It is a societal switch that has not been flipped. From the outside looking in, there are judgements that are placed on our students. Participant 5 also suggested that some teachers might see this as interfering with other things that they must teach, but they could be convinced pretty quickly of how significant this kind of learning can be.

Training and Professional Development Opportunities

Another trend gained through the research is that professional development is not consistent for typical classroom teachers. Professional development and training is a key element of nature-based education becoming successful in Arkansas. Training allows teachers to gain experience in multiple facets such as lesson plan building, risk assessment, and using natural elements to connect multiple subjects at any given time. Unfortunately, there is little to no professional development for general classroom teachers that is built around nature-based education. Participant 2 suggested that the organization in which he works tries to provide professional development opportunities for classroom teachers and claimed in traditional education, for those type of professional developments, I would love to see more educational workshops and trainings for classroom educators and that is something here at the Kaiser classroom we are trying to address. What type of workshops can we create for classroom educators in this area that they can utilize within their classroom as well as their own field trips. Participant 7 stated that in the public-school sector, there is always pressured to get a certain number of kids to be a certain level and that data is gathered through formal, standardized assessments. Professional development is always offered on issues related or connected to testing.

The need for teachers to participate in nature-based education can help teachers build a required skill set that includes safety, preparedness, flexibility, and curricular influences. Currently, teachers are not being offered this form of professional development. Participant 1 suggested that nature-based education should be added to the core of professional development for general classroom teachers and that workshops are needed for teachers regarding activities withing lesson plans and curricular connections.

Participant 4 claimed that anything you can teach in a classroom, you can teach outside and maybe do it better. All we need is more opportunities for general classroom teachers to grow in this area of education.

There are multiple ways current nature-based educators suggests teachers can attain professional development on nature-based education. Participant 10 claimed that guest speakers have discussed behavioral management in nature-based settings. Another, firsthand opportunity to gain skills in nature-based education is to personally visit a currently operational nature-based school. Participant 11 stated that the nature-based organization she is a part of has toured the Delta School, which is one of the inspiration schools for the Willow Roots Learning Center. In addition, environmental organizations always have access to resources and materials geared around professional development. Participant 12 claimed that she was able to get certified through the Forest School Teacher Institute, and that there have been many seminars through Project Learning Tree, Project Wild, and Project Wet that she has joined. Two of the research participants are active members of the Master Naturalist program and the benefits available through that program are impressive.

Administrative Support

With all of the pressures that accompany managing and leading a school district, the challenges that educational leaders face are undeniably present. Educational leadership requires specific character qualities, and devotion to lifelong learning. Currently, nature-based educators acknowledge two stances regarding administrative support and nature-based education. The first stance is that there is not enough support

for public school, general classroom teachers. The second stance is that educators currently working in a nature-based education program, have all of the support they need.

Though some nature-based educators may not be aware of the stressors that come with educational leadership, the perceptions of how school administration responds to progressive nature-based education in the everyday school structure is discouraging. Participant 1 claimed that the overall support that he sees from the school's administration is negative. Participant 2, who has been able to work in nature-based education in multiple states, suggested that there is not a lot of support in Arkansas for the growth of nature-based education. Participant 3 currently serves in a public school and mentioned that personal support he has, but the overall support of creating change is a challenge that is common. Participant 3 claimed that:

> The existence of my position is evidence of support from the program for nature-based learning and our school district. My role is a long standing role in the district. I feel supported by leadership. I am beginning to see some difficulty and I believe this is partly because it is a public school setting and because of the disruption of it. There is a lot of opportunity for growth in nature-based learning. How do we expand into the culture for schools? It is a partner organization, but if we are going to fully realize the benefits of nature-based learning, it has to be a part of the culture of the school. So, who does the work? With the students, to get that consistency that brings nature-based learning to the fullest impact, it has to be the teachers. It does not have to be extensive. It does not have to be a full day once a week. That is where the support is not present at all. On one hand, there is a lot of stress teachers already have, and a really strong sense of urgency around

> getting student performance back. We might recognize that nature-based learning is a gateway to that, but the risk of taking time out of the day to try something new is too much for administrators to get on board with. There is not a lot of support from the top. There is abstract support of the idea but a lack of follow through when it comes to making institutional changes.

The observations that took place were engaging, progressive, and insightful for this research. The Kessler Mountain Nature Center and Outdoor Classroom is nestled in Northwest Arkansas. Upon arrival, the outdoor classroom team met and discussed the upcoming school group and field trip. The team established goals for the day and communicated curricular outcomes specific for the new group of learners. The Nature Center offers indoor and outdoor learning spaces, and the structure of any given day incorporates learning in both spaces.

The Nature Center is able to provide field trip opportunities for students in 3rd grade through 12th grade, and utilizes the skills and knowledge of environmental specialist that serve their community as volunteers in nature-based education. When students arrive at the Nature Center, they are beyond excited to enter a world that they have never experienced. The beauty of curiosity that sparks when students, parents, and teachers enter the nature center is inspirational. The Nature Center allows students to explore nature with the firsthand, curated elements withing the indoor learning space. There are microscopes that students can look at snake skins, insects, plants, and other natural elements. Students can feel different furs, different teeth, and different animal footprints that have been collected over time. Students are able to access all of their

senses withing this learning space and revisit those same senses when they enter the outdoor learning space.

The outdoor learning space offers a circular bench pavilion that promotes open collaboration. It is surround by trees and is open to the public. After student meet under the circular pavilion, they establish ground rules for respecting nature and potential risks. The outdoor classroom offers a beautiful hiking trail that is perfect for people of all ages and skillsets. Many students have never hiked before they visit the Nature Center, and the trail available to them is easy and offers many things. While on the trail, students are able to touch based with so many facets of education. They are able to relate previous knowledge to nature. The joy and excitement that students express when they see something new under a rock, hear a bird song, or feel the texture of leaves is a magical experience. There is an eagerness for students to share their discoveries with the group and promotes whole group collaboration.

The Willow Roots Learning Center is situated on Beaverfork Lake and is currently operating in an operational church camp. On the property, there are two ponds, cabins that are used as classrooms, a central cafeteria, and many opportunities for nature-based education to thrive. Most of the learning takes place outside, and for unpredictable weather, the cabins are utilized as classrooms. Students take charge of their learning and are learning at various levels. The teachers flip the classroom into a more student-led environment. Students are required to have rainboots and rain jackets.

At Willow Roots, there is a combination of public school teachers that have transitioned into nature-based education, occupational therapists, and teachers that have only worked in a nature-based setting. Students are constantly engaged in multiple

curriculums at one time. Students are able to collaborate with students that may be younger or older than they are. Each child has their own first aid kit and discuss risks multiple times each day. The responsibility, social reform, and academic knowledge that students possess at Willow Roots is unprecedented.

Overall, the current trends that are noticeably hindering the progression of nature-based education in Arkansas include three common themes including: the challenges presented in nature-based education, training and professional development opportunities, and administrative support. Though the challenges of nature-based education will always exist, the professional development and administrative support must progress in order for nature-based education to become a priority for education in Arkansas.

V. Discussion

There is a lack of nature-based education in Arkansas. Though typical classroom practice has evolved over the years, the area of nature-based education is still deficient. Issues that remain unsolved include how to properly train and educate K-12 educators in providing quality nature-based education to students, and the amount of support that teachers currently have from the administration in promoting nature-based learning.

The current amount of research and literature available on nature-based education in Arkansas is limited, in turn, making this study even more crucial for the progression of nature-based education. The literature available from studies completed in other countries is more prominent do to the nature of social and educational norms in other countries. As outdoor learning is a standard practice in daily education, other countries have bountiful research proving the validity of this study.

The following research question was used as a guide for the research: What are the perceptions of nature-based educators regarding the value of incorporating nature-based learning into the overall Arkansas K-12 curriculum? The researcher presented nine questions to interview candidates. The questions presented are as follows: What is your experience in teaching in a nature-based or outdoor classroom environment? What nature-based learning professional development or training, if any, has been provided in your organization? When students are observed in a nature-based learning environment, is there a noticeable difference in academic and social motivation versus in the typical classroom setting? From a teacher's perspective, how could specific learning approaches, such as cross-curricular activities, be implemented into a nature-based learning environment? What are some advantages of nature-based learning? What are some

disadvantages of nature-based learning? Since COVID-19, what social, physical, cognitive, and emotional differences are noticeable in children and what are ways that nature-based education can impact these elements? What does the administrative support currently look like in nature-based education? Is there any funding or grants, that you know of, available for establishing or improving existing nature-based classrooms?

The following chapter will provide a summary of the findings, present explanations and interpretations of the findings, suggestions for future research based on the findings, and provide a conclusion of the study.

Summary of Findings

Throughout the interviews, and observations, common themes arose and are further noted. The interviews allowed seven themes to develop, however, those themes are sub-themes withing the research. Undoubtedly, the research indicates that current nature-based educators are expressive about two primary elements within their work. The first element that is present is the overall difference between nature-based education and the typical classroom setting. The second primary element that developed within this research is the current trends that are noticeably hindering the progression of nature-based education in Arkansas. The collected perceptions of current nature-based educators provided three common themes within this element including: the challenges presented in nature-based education, training and professional development opportunities, and administrative support.

Learning Atmosphere Differences

Notable learning differences emerged throughout this study. The overall differences within nature-based learning and the typical classroom setting are obvious to

nature-based educators. According to nature-based educators, the factor of student focus and motivation is enhanced. Motivation and focus are challenging regardless of age, and multiple factors contribute to that development such as maturity. One contributing factor that helps motivation and focus is allowing students to experience a sensory output. According to nature-based educators, students have more positive interactions with peers, socially and emotionally.

Holistic education not only includes academics, but also social and emotional growth. There is also a difference in the confidence that students express with nature-based education. According to nature-based educators, there is a greater opportunity for student-led learning, problem solving, and self-discovery. This item alone connects to the theory of inquiry. According to nature-based educators, the final element noticed is that overall student engagement is higher due to more excitement for learning. Nature-based education allows students to be expressive, share opinions and discoveries, and learn in an atmosphere that they have yet to discover.

Comprehensive Advantages of Nature-based Education

Numerous advantages emerged throughout this study. Nature-based education finds a balance in contributing to the physical, academic, social, emotional, and character development for children. In turn, providing a sound education for the whole-child experience. The advantages of nature-based learning undeniably outweigh the challenges that it presents. In this component of nature-based education, research participants give insight into the benefits of nature-based education and how they are used within the educational setting.

An educational setting that can provide the whole-child learning experience creates an open space for individual student growth. Nature-based education also provides a refreshing stance on meaningful learning and new skill development. The environment, itself, gives students limitless opportunities to connect previously learned skills to an unfamiliar environment. The component of spontaneous learning provided in nature-based education promotes enjoyment, engagement, and a life-long learning mindset. Today's students require motivation, and intentional learning opportunities that spark from curiosity. The element of surprise that is noticed in nature give students a teachable moment at unpredictable times, forcing students to stay alert and engaged. The numerous health benefits available through nature-based education are astounding. Physical, mental, social, and emotional health are all assessed and developed in a natural environment. Students are physically active, and fresh air allows for mental clarity. Mental clarity enables students to engage in stress-reduction and promotes an overall sense of well-being.

Cross-Curricular Connections

The importance of providing student with cross-curricular experience and how attainable they are in nature-based education emerged throughout this study. The importance of allowing students to experience cross-curricular connections is vital. Having the ability to relate something learned in a specific subject and then understanding how it is embedded within other subjects creates a partnership for creativity, critical thinking, and collaboration to thrive.

Nature-based education creates endless occasions for teachable moments to happen. Whether students notice something that relates to a topic being taught, or a

teacher expresses the connection of two concepts, cross-curricular activities organically live in nature. Learning in a nature-based setting allows for students to become responsible and leaders of their own learning. If creates an atmosphere of multiple curricular connections, allowing students relate past knowledge to new knowledge.

Overturning the Aftermath of Covid 19

The Covid 19 pandemic proved many challenges over multiple years. The aftermath of the pandemic is still visible today. The Covid 19 pandemic forced schools to close for an entire nine weeks. Returning the next school year still gave way to an abnormal learning environment for students. Many students completed their schoolwork virtually, while others that attended school, ran the risk of being quarantined due to close proximity with a student that had a positive Covid test, or worse testing positive themselves.

The effects of Covid 19 will be noticeable for the generations to come. The education system made choices that were best for the schools and students. However, the aftermath of the pandemic is very much present today. Nature-based education provided an outlet for communities and schools during the pandemic.

Challenges Presented in Nature-based Education

As with anything, challenges arise with the advantages. Nature-based education presents advantages that outweigh the challenges, but educators must acknowledge the challenges in order to teach around them. The challenges that often occur in nature-based education can usually be prevented with a risk assessment, basic knowledge of nature, and willingness to grow through being uncomfortable. In addition, seeing nature-based education with a “deprograming” of societal norms is also a challenge.

Primarily, establishing safety and clear boundaries is vital to any educational process regardless of location. Educators, even typical classroom teachers, are used to addressing safety issues within any school. Tornado drills, fire drills, and active shooter drills are three major safety elements that have specific procedures that a teacher knows and is able to apply at any given time. Smaller concerns such as a student accidentally cutting a finger with scissors, or wearing proper lab protection in a science class are equally as important. The same risk assessment process is taken with nature-based education; however, it takes time to establish the development of this practice. Another common theme that developed was the issue of unpredictable weather and natural elements. Even with modern technology, weather can change without much notice. Participant 9 mentioned that without the right clothes, the weather can be problematic.

A final challenge revealed through this research is the concept of current social norms and the outward impression of nature-based education. Due to the lack of knowledge, most members of society have, nature-based education is usually represented as anything but education. The format of nature-based education is different and the priorities are not solely built on preparing for a standardized test. It defies the robotic format that is ever present within the education system.

Training and Professional Development Opportunities

Nature-based educators fully suggest that there must be a reform in the training and professional development opportunities that are available for general classroom teachers. Another trend gained through the research is that professional development is

not consistent for typical classroom teachers. Professional development and training are key elements of nature-based education becoming successful in Arkansas.

Training allows teachers to gain experience in multiple facets such as lesson plan building, risk assessment, and using natural elements to connect multiple subjects at any given time. Unfortunately, there is little to no professional development for general classroom teachers that is built around nature-based education. The need for teachers to participate in nature-based education can help teachers build a required skill set that includes safety, preparedness, flexibility, and curricular influences. Currently, teachers are not being offered this form of professional development. There are multiple ways current nature-based educators suggest teachers can attain professional development in nature-based education. Another, firsthand opportunity to gain skills in nature-based education is to personally visit a currently operational nature-based school.

Administrative Support

The amount of administrative support that is currently noticeable in the education system, though not completely absent, is not as present as it must be for nature-based education to progress. With all of the pressures that accompany managing and leading a school district, the challenges that educational leaders face are undeniably present. Educational leadership requires specific character qualities and devotion to lifelong learning.

Currently, nature-based educators acknowledge two stances regarding administrative support and nature-based education. The first stance is that there is not enough support for public school general classroom teachers. The second stance is that educators currently working in a nature-based education program, have all of the support

they need. Though some nature-based educators may not be aware of the stressors that come with educational leadership, the perceptions of how school administration responds to progressive nature-based education in the everyday school structure are discouraging.

Interpretations

Collectively, the major findings within this study have proven multiple things. The obvious multiple differences between nature-based education and typical classroom education were brought to light through valid and reliable contributions from nature-based educators. There are advantages to nature-based education including the effortless cross-curricular connections that can be made and helping to reverse the aftermath of the Covid 19 pandemic.

The drawbacks of nature-based education that were brought to life through this study include the challenges that nature-based education presents, the lack of training and professional development that is available to general education teachers, and how administrative support is present, but still not up to par.

With the provided clarity on the findings of this study, it is apparent that there must be a bigger conversation regarding nature-based education if it is to improve in Arkansas. Nature-based educators, environmental specialists, and school personnel must become willing to create spaces in which conversation about nature-based education can take place. Many educators and administrators are intimidated by nature-based education simply because it is a newer concept for our state.

The findings also suggest that there is a definite need for professional development and training opportunities to become available to general education teachers. Part of this responsibility falls on the current nature-based educators as they are

the ones with the knowledge base and comfortability in nature-based education. With the proper training, general education teachers will become more confident and after incorporating nature-based education into daily practice, it may have a domino effect on the level of administrative support.

The results of this study were most expected. The representation of advantages is described in this study. Each participant shows a dedication to his or her craft and a passion for education and nature. The sample selection was well-established based on the criteria the research needed. This shows that there are educators that have worked in all sectors of the educational system, including public, private, and homeschooled, and have still found that nature-based education is a more solid, holistic approach to learning. It also means that nature-based educators can be from any background. This study gained contributions from public school teachers, nature-based teachers, environmental specialists, occupational therapists, and educational volunteers. It is remarkable that the vast experiences they share, though different, are all contributing to the same need and that is the need for nature-based education to progress in Arkansas.

One item that was not expected was the transparency of current nature-based educators that also work for a school district. The expectation for all participants to say that zero administrative support existed was high, however, one participant does feel supported. Connecting to that, the geographical location of the said school district is in Northwest Arkansas. Northwest Arkansas is a region that has a prominent community focus on nature and existing in the outdoors.

Any curriculum can be taken into the outdoors, in turn, allowing students to engage with personal senses, social development, and academic growth. Inquiry-Based

Learning (IBL), the theory formed by John Dewey, suggests that IBL is comparable to student-centered learning and project-based learning. IBL opens a door for students to investigate individual and explorative learning. Effective outdoor learning addresses the unique features of the environment and makes connections between school-based learning and the student's life experiences.

This research proves that the connectedness that nature provides students is not something easily attained in a typical classroom. The limitless educational opportunities presented in nature are attainable for students of all ages, of all backgrounds, of all developmental states, to come together and share a common phenomenon. Aside from the interviews and observations, the literature review suggests the same findings from other studies.

The literature review proves that nature-based learning is effective for enhancing student learning and motivation. It also suggests that even with modern technology, there can be a combination of technology and nature, providing cross-curricular experiences for students. The literature also provides that the physical, mental, social, and emotional benefits that are gained in nature-based education have a genuine impact on how children grow into successful, lifelong learners.

Implications for Practice

Though this study provides many elements that contribute to the progression of the field of education as a whole, the current study specifically offers essential information for Arkansas schools. The current curriculum in Arkansas is built around the Common Core State Standards. The standards are solid and offer an in-depth curriculum built on age-appropriate skill bases. This study addresses the issue of Arkansas schools

falling short in the provision of nature-based learning experiences for students, which is desperately needed. Though Arkansas educators effectively use the current curriculum, this study suggests that incorporating nature-based education, in all subjects, can allow Arkansas school districts and their students to thrive.

If nature-based education is embedded in the current curriculum offered to students in Arkansas school districts, students would gain access to multiple elements. Students would benefit by exhibiting higher academic achievement, healthier mental and emotional awareness, and social stability. Nature-based education blended into the daily structure of school allows the definition of "cross-curricular experiences" to expand. The overall whole-child experience of childhood education would be refurbished and the outcomes of a healthier childhood would lead to a healthier adulthood.

This study also suggests that nature-based education can assist school districts in closing the academic gap that was developed through the Covid 19 pandemic. Across the state, students have fallen behind due to the negative effects of the pandemic, and it will take multiple years to level the playing field of academic success. Students are showing more cognitive, social, and mental delays since the pandemic and nature-based education offers school districts a way to create a positive outcome for a negative experience. The impact that nature-based education can have on a student is limitless. This study proves that nature-based education has more to offer than just recess.

Suggestions for Future Research

The results of this study should be used to promote conversations built around nature-based education with all educational stakeholders. It can also be used to determine how our state can invest in providing nature-based classrooms for school campuses that

may or may not have access to a nature-based learning environment. Anyone invested in the educational system can use the information presented in this study. Students, parents, school administrators, community members, and politicians can benefit from this study and future studies. Eventually, an understanding of how nature-based education is more than just hippie children frolicking in a field must be established. Conversations, partnerships, and a willingness to explore the comfortability of a new learning setting must take place.

This study connects to the major topic explored by elaborating on the perceptions and insights of currently practicing nature-based educators. The perceptions of practicing nature-based educators with such diverse backgrounds create validity for this study. Their perceptions brought the major topic full circle and filled in the gaps that the literature could not fill.

Future studies related to this topic include funding for the development of nature-based classrooms, how to effectively promote the progression of incorporating nature-based learning within the educational standards that are practiced in Arkansas, and how to ensure that general classroom teachers have the access to nature-based materials and resources in which they require to effectively teach in a nature-based learning environment.

Implications for future research include an overall educational reform that should be offered, not required. There is small funding available through environmental organizations, yet there needs to be more from the federal and state level, to ensure that all schools have access to a natural learning space. Specific to Arkansas, incorporating nature-based education with the current standards might be challenging, due to educators

needing to bridge the educational gap caused by the Covid 19 pandemic. The need for general classroom teachers to have access to nature-based materials and resources, including professional development also presents the issue of when to fit the professional development into their schedules, and who will provide the provides the professional development.

Conclusions

Arkansas is currently lacking in the application of nature-based learning for K-12 students. Though there are multiple factors that contribute to this issue, the lack of resources, discussion of, and exposure to nature-based learning practices are only contributing to the hesitation of current classroom educators to provide learning opportunities in a nature-based setting.

This study has established the perceptions of practicing nature-based educators. It has brought to light the deeper concepts of nature-based education and how it relates to the overall concept of lifelong learning. This study has provided the advantages and challenges of nature-based education. It has shown how nature-based education is full of cross-curricular experiences and how it can help reverse some of the effects of the Covid 19 pandemic that is noticed in today's students. This study has also provided that more professional development and training are vital for classroom teachers to gain the skills needed to be successful and confident within a nature-based learning environment, and how administrative support is necessary for the progression of nature-based education within schools.

This research is valuable for multiple educational stakeholders, primarily students. Arkansas educational stakeholders must take greater measures in supporting

classroom educators in providing holistic education and learning opportunities for students. The students of today are the future of tomorrow. If the educational system does not provide a sound holistic education for students, it may prove to contribute to the downfall of our society. Nature-based education can offer students everything needed to gain life skills, grow academically, and learn to thrive as lifelong learners.

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Appendices

Appendix A: ATU IRB Approval Letter

ARKANSAS TECH UNIVERSITY

OFFICE OF RESEARCH AND SPONSORED PROGRAMS

1509 North Boulder Avenue
Administration, Room 207
Russellville, AR 72801

479-880-4327
www.atu.edu

December 2, 2022

To Whom It May Concern:

The Arkansas Tech University Institutional Review Board has deemed the application for Jessica Mashburn's proposed research, entitled "Perceptions of Nature-Based Educators: A Phenomenological Study," to be exempt pursuant to federal regulation 45 CFR 46.104 (d)(2)(ii)(iii). Please use number E-2022-21 when referencing this study.

Please note that in the event that any of the parameters of the study change, the researcher may be required to submit an amended application.

Please proceed with your research. We wish you success with this endeavor.

Sincerely,

Tennille Lasker-Scott, Ph.D.
Institutional Review Board Chair
Arkansas Tech University

Appendix B: Permission to Conduct Observations On-Site

Willow Roots Learning Center

From: Gracie Hardy <info@willowrootslearningcenter.org>
Sent: Wednesday, November 30, 2022 12:34 PM
To: Jessica Mashburn <jmcgehee1@atu.edu>
Subject: Re: Nature-Based Education Study

Yes, we give permission1 Can't wait to have you!

On Fri, Nov 18, 2022 at 1:16 PM Jessica Mashburn <jmcgehee1@atu.edu> wrote:

Gracie,
I forgot to attach the formal permission letter.

I hope to hear from you soon.

<Outlook-qmqknq1l.png>

Arkansas Tech University
501.548.7826

From: Jessica Mashburn
Sent: Friday, November 18, 2022 12:37 PM
To: info@willowrootslearningcenter.org <info@willowrootslearningcenter.org>
Subject: Nature-Based Education Study

Hi, Gracie!

We spoke earlier in the semester. I am a doctoral student at Arkansas Tech University and am writing my dissertation on the perceptions of nature-based educators in Arkansas. We had talked about the need for me to conduct interviews and observations, and I would like to have permission to follow through with these items.

I have consent forms ready for any nature-based educator that works with you that is willing to participate in an interview and observations.

I will not be interviewing any students for this study, only observing. If possible, would you mind responding to this email and providing me permission to conduct research with the Willow Roots Learning Center?

Thank you again for your time,

-Jessica

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Arkansas Tech University
[redacted]

From: Evan Johnson <ejohnson@nwalandtrust.org>
Sent: Monday, November 28, 2022 10:27 AM
To: Jessica Mashburn <jmcgehee1@atu.edu>
Subject: Re: Nature-Based Education Study

Hello Jessica,

You have permission to conduct research on the Kessler Classroom. What are some times that would work for you to come visit, observe and chat with some of the educators? We have field trips going on until Dec. 18th and then will resume them once again in late February.

Best,
Evan Johnson

Community Engagement Coordinator
[redacted]

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