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What are Rural Minnesota Elementary Teachers' Views Regarding Their Preparedness to Teach Environmental Education

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By

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Table of Contents

CHAPTER ONE

Introduction

"The only way forward, if we are going to improve the quality of the environment, is to get everybody involved." - Richard Rogers

My interest in nature and all things related to the environment started at a young age and steadily developed from that initial interest, to a hobby, and now has blossomed into a lifelong passion throughout college, graduate school, and ultimately into my working profession. My motivation throughout the years has been my desire to make a difference for our environment, wanting to be the best steward of nature that I can be, and wanting to help others connect to nature and see its beauty and usefulness as a pristine untouched area that doesn't require human development to make it important or of worth. However, I worry that many adults and children do not view nature as a positive, welcoming, or worthwhile place, because of a lack of learning and involvement with it. Specifically, I have often wondered if elementary school kids are getting the proper education that helps promote and foster their curiosity and inquisitiveness about nature. My intrigue with this topic and in environmental education, in general, is directly related to my own education or lack thereof in grade school. This has led me to explore the question, *What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* Chapter One will examine why I am curious and looking into this question by delving into my childhood exploring nature in

rural Minnesota, my experiences with environmental education (EE) in school, and my specific interest in my thesis question.

Growing Up

I was born and raised in a small farming community in rural Minnesota, roughly an hour drive from the South Dakota border. I grew up in town, but farms and fields were a short walk away. My parents and their friend, a neighbor of ours, both had a nice chunk of land that allowed me to roam around and appreciate nature while not having to leave my space. One of my earliest memories however, has nothing to do with going outside to explore. When I was five or six, I was looking through a book about sharks and ended up reading a small paragraph about lemon sharks. That was the first thing I read by myself without any help from an adult or older sibling. This memory was the first in a long line of great memories I have about nature and the environment as a kid. From that point on, I tried to consume anything I could find about plants, animals, and the environment. The overwhelming amount of environmental memories I have as a child from that point on, were made by first hand experiences outside, reading nature books, or watching EE themed programs. However, the vast majority of this was consumed outside of school. Very little of my environmental knowledge and memories are associated with my schooling. Elementary school in particular, seems to be a blank spot in my memories for me, but overall, K-12 schooling did not leave a lasting EE memory for me. Luckily, I was fortunate enough to have positive influences at home that pushed me to become more connected to the environment.

The property owned by my parents and our neighbor had a lot of variety of nature within it. One large area was low ground and had standing water in puddles for the rainy parts of the year. I would bike down the hill and make rooster tails through the puddles and catch frogs. I would round up all the frogs I could find and place them in a specialty crate and bring them up to the house to show my mom and dad. We would then count them and look at the different colors. They would help me to identify them and tell me all of the names and species of frogs that they knew, we mainly had leopard frogs, then I would haul them back down to the puddles and let them go. One time, the neighbor girl and I even brought baby mice home. My mother was not impressed and we were promptly told to go put them back where we found them and then we were forced to take showers. Needless to say, neither of us ever messed around with mice again. That day I was also taught a valuable lesson by my mother, she taught me that you must never take baby animals out of their nests, because you can harm or seriously injure them. It's best to just leave them alone.

One of the most interesting things that I brought home was snapping turtle eggs. My uncle watched someone run over a snapper on the road and knowing it was right around egg laying season, he investigated and found that it was full of eggs. He gave them to my dad and we brought them home for me to hatch out. We dug up a sandy part of the yard and put them in with a mesh covering to help keep predators out. Every single day I would go check on the nest and report back to my parents on how it was doing. Then one day, they hatched! Getting to see turtles break out of their shells was a fantastic and unique experience.

Other areas of the property had tall reed canary grass and cattails. Ring-necked pheasants would camp out in this area and nest all the time. Red-tailed hawks, other smaller hawks, and falcons would also patrol the long grass looking for small rodents to scoop up. The rest of the property had buildings and trees on it which is great for other feathered friends that would visit our feeders and use our treeline and vines as nesting places. The yards were always full of birds of all colors and sizes. I believe this is the reason why I became obsessed with birds. I would spend hours sitting outside watching them and observing their habits. I even made a homemade bird blind, out of a refrigerator box, for winter observations. I would bundle up and bring a thermos of hot chocolate out with me, along with a snack, and sit out there in the cold for hours waiting for the perfect moment to get a good photo. My parents bought me bird books, magazine subscriptions to *Ranger Rick, My Big Backyard*, and *National Geographic,* and countless other books and flashcards that were all about animals, plants and geography. I learned so much about the environment and EE from all my first-hand experiences, the information I read, and the nature shows I watched. However, the lack of school memories associated with the environment is glaring.

It's obvious to see my personal upbringing with EE was enriched from my parents and my overall interest in nature. All of this provided a solid base on which I could build on. However, this may not be the case for many children who live in rural areas of Minnesota. For me, school left my desire to learn unsatiated and left me wanting more. If I had not had the push from my parents, I probably wouldn't have even noticed I was missing any educational opportunities.

My Experiences With EE in Elementary School

Trying to recall everything you did in elementary school is hard for most people and I am no exception to that. I know I've forgotten some experiences related to EE. That being said, I honestly have very little recollection of EE or anything related to it from my elementary school years. The few things I do remember were more or less just small units rolled into a larger, more general course or they were one-off activities that gave out information, but did not build on what was provided. If I didn't already have a strong base of environmental knowledge, I could have easily moved up into grades 7-12 with no grasp of EE or nature in general. I still feel that I missed out on knowledge that would have been helpful to me as a child and young adult. I'm not laying blame toward anyone for the lack of formal EE that I had, however, because of what I perceive as a lack of exposure to EE, it made me interested in knowing more about how teachers themselves feel about the field and how they are instructed in college and supported by their current employers to include EE in their current curriculum.

Research Question

The question I proposed at the beginning of the paper is aimed specifically at rural elementary teachers, how they perceive EE, and how they believe it should be implemented in elementary schools. I believe rural elementary teachers in general are underrepresented when it comes to EE being present in their curriculum. Based on the literature I have read for this thesis, there are clear signs as to why EE is important for everyone and is specifically important for grade school children. With that being said, I feel there is a lack of research focused specifically on the teachers themselves. To go a

step further, I specifically want to look at rural Minnesota elementary teachers to see how EE is represented in this state. Are these teachers set up to succeed or to flounder? Is there an education gap teachers hold coming out of college, curriculum crunch at the schools they teach at, school district funding problems, or a combination of all of these plus other factors? These are important elements that need to be further investigated, because EE is not a new field of research by any means, yet it still has trouble working its way into mainstream education. With that being the case, most data collection done on how kids and teachers are connected to the environment is with urban children and teachers, not just in Minnesota, but all over. A lot of attention is paid to them and rightly so, because urban areas are accessible and there are a lot of people that can provide feedback. This leaves a large section, rural, that is not looked at as closely. Just because it's not an urban environment doesn't mean that rural students and teachers should be neglected when it comes to understanding and researching how they view and respond to EE. Specifically looking at rural elementary teachers and getting to know how they feel about EE is just as important as their urban counterparts. This is why I want to see how rural Minnesota elementary teachers view their own education on EE in college, how they view EE as a class, how they believe it can be made better, and how they go about teaching EE to their students. I want to give everyone a glimpse of what rural Minnesota elementary teachers think about EE and how they feel it could be expanded on to be more beneficial and inclusive.

Getting honest responses from rural Minnesota teachers is crucial to understanding how EE as a profession is being viewed in schools and how that

knowledge is being taught to the students and teachers themselves. Are rural Minnesota elementary teachers being given the same opportunities and resources, or at least the option to have access to resources, given to other elementary teachers when it comes to EE education? From what I have researched, this is not a clear cut answer because colleges offer different courses to their teaching students and elementary schools do not mirror one another in teaching styles or structure. This thesis has the ability to get a first hand perspective on how rural Minnesota elementary teachers view themselves as EE instructors, how important EE is to them, and how well they believe EE was taught to them when becoming teachers themselves. Understanding how the teachers view EE is a great way to then mold and reshape how EE should be presented to these individuals and others that may be facing a similar situation.

Summary

I've been lucky enough to have an upbringing that was filled with first hand experiences in nature. I was also very fortunate to have an outpouring of positive reinforcement and information provided to me by my parents who recognized my interest in nature at a very young age. That being said, my experience with EE in school was lackluster at best. Because of that, I've often wondered if my teachers, specifically in elementary school, were actually prepared to even teach EE. This has drawn me to the question: *what are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* I believe teachers deserve to have every opportunity to better themselves and feel comfortable teaching subjects they might not be

familiar with. When teachers are confident in themselves and their own knowledge base, they can offer a better experience to their students.

In Chapter Two I will review literature for each section that I believe plays a role in answering my thesis question. In Chapter Three I go over my methodology and how I will collect my data. In Chapter Four I will report my findings of my research. Chapter Five is the final chapter and in it I will discuss the importance of my findings and suggest future research.

CHAPTER TWO

Literature Review

Introduction

As I stated earlier in this thesis, the vast majority of EE I received was outside of school in a non-formal setting. I have very little recollection of being presented with EE for any length of time in school, specifically at the elementary school level. This lack of formal education throughout school made me think about why EE was not viewed as an essential field of study for students. Because of this, I want to look into the question: *what are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* This chapter will delve into literature associated with this question, specifically EE, educator training, teacher perceptions of EE, environmental organizations, and school constraints. Each section of this literature review will look at different aspects of how EE is viewed, understood, and incorporated by elementary teachers, and what may hinder those teachers from teaching EE in their classroom.

Evolution of Environmental Education

What is environmental education? According to the Environmental Protection Agency [EPA] (2018), "Environmental education is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment" (p. 1). Although the EPA definition is helpful it is quite generic and does not go into much detail of what fully encompasses the study of EE. With that being the case, many individuals could see EE as simply that and not view it in a more detailed

manner. A different, more detailed representation of EE comes from the Wisconsin Environmental Education Board (WEEB) (2015):

> EE is a lifelong learning process that leads to an informed and involved citizenry having the creative problem-solving skills, scientific and social literacy, ethical awareness and sensitivity for the relationship between humans and the environment, and commitment to engage in responsible individual and cooperative actions. By these actions, environmentally literate citizens will help ensure an ecologically and economically sustainable environment. (para. 2)

This more detailed quote from WEEB shows the interconnectedness within EE and emphasizes that it is a lifelong learning process. Both of the above definitions are good to know and understand, yet they do not specifically explain the components of what EE is or how it is used. For a more academic look, we have to turn to the National Environmental Education and Training Foundation, which notes that

> Environmental Education (EE) is a rich mixture of teaching strategies, subject matter, learning locations, and multi-disciplinary complexity. Unlike many arms of education that impart cognitive knowledge and stop there, environmental education pursues a powerful mix of deep understanding tied to the ability to apply what has been learned. (Coyle, 2005, p.1)

It is important to have both the EPA and WEEB definitions represented alongside the National EE & Training Foundation. It shows that there are differing interpretations and no one singular view of what EE is and how it is expressed. Even if there is a similarity

between different government agencies, states, and other organizations, that does not mean they all view or teach EE in the same way.

To the surprise of some, EE as a way of thinking, teaching, and learning has not always been around. That does not mean EE is a new concept in the United States. Its evolution comes from a variety of fields from the early 1900s (Monroe & Kransy, 2015, p. 10). Many individuals from that time period with different backgrounds, such as education, conservation, and resource management, helped to construct the first basic understanding of how education and nature needed to be intertwined. EE emerged from courses that were directed at specific areas of the environmental field. These courses dealt in the general study of the outdoors and nature, to more concentrated courses dealing with conservation. All of these fields of study set the stage for EE to develop into its own area of focused research (Monroe & Kransy, 2015, p. 11). All of those fields offered specific views of teaching and learning about nature, but they did not always fit together in a cohesive way. This continued to be the norm until 1968 when Doctor William Stapp and the students he taught at the University of Michigan sat down and (Monroe & Kransy, 2015, p. 12),

> ...discussed the limitations of conservation education (that it was pretty much descriptive) and of outdoor education (that it mainly dealt with ways to use the outdoors to enrich the school program) and agreed that there was a need for a new area that looked at the total environment and which explored much more of a problem solving orientation and what citizens could do. (Gough, 1997, para 20)

At that moment, the phrase EE was coined and a new field of education was opened up for the world to explore.

Throughout the decades, EE has been modified and continues to be developed to help connect with specific people or deal with specific topics. The environment itself can influence what is going to be the main focus for EE across different regions and countries, but it is far from the main driving force behind that. According to Monroe and Kransy (2015), "The strategies and priorities pursued through EE are strongly shaped by political power, current environmental issues, social priorities, and trends in educational policy" (p. 22). Because EE can be influenced by so many different factors, it can be difficult to get an overall view about how to most effectively teach EE as a subject. Significant differences in how it is defined and taught can be seen when looking at different environmental organizations, grade schools, universities, states, federal government, and different countries. Specifically looking at countries one can see the influence of curriculum standards on EE but there are still differences. Starting in the 1970s there was a mindset to set simple activities that could be accomplished relatively easily. As time has progressed trends in teaching and looking at EE have changed and now many countries do not prioritize simple easy activities. Many countries now emphasize other aspects including some form of curriculum standards, hands on projects, and achievements. Although EE has a base set of curriculum standards most nations still do not recognize EE as a standardized subject that is taught in a specific area such as science. Not having a specific area does have advantages though because EE is pliable and can work with a multitude of disciplines. This allows the reach of EE to spread

around to many areas and is supported by many different individuals. (Monroe & Kransy, 2015, p.23). The field of EE is skilled at working within other disciplines because of its ability to mold its lessons to fit the standardized class it is working hand in hand with. Anything from history, sociology, biology, English, and many other subjects can be used in tandem with EE. However, as mentioned before, the ability to change and mold to fit within other classes leaves EE in a precarious spot. Since EE is not a core subject, there is no mandate that says that it has to be offered and if it is, most often it will be combined with other classes, meaning that it can get sacrificed if there are time issues and or budget cuts to consider. This occurs even though there is evidence that integrating EE into a teacher's curriculum is imperative (Meier & Sisk-Hilton, 2017, para. 3).

Trying to understand what EE is, why it is important, and then teaching that knowledge to others, is a tall order for anyone. That task becomes even harder when those trying to convey that knowledge are teachers who may feel they are not properly prepared to teach EE effectively. If that is the case, it is imperative that teachers are empowered and provided with resources to better understand and teach EE concepts and understand the significance of what they are teaching to their students because environmental topics have grown to be a larger part of our society again. Once again the attention that was given to the environment on a large scale back in the late 1960s into the 1970s has come back into the spotlight and it has not become easier to comprehend. Most of the environmental problems that are facing our current time are even more complex and hard to solve. It’s not unthinkable that the same problems and or others will still be around when today’s children grow to be tomorrow’s adults. Large complex problems

like this mean that there is an urgent need to help primary students start understanding the environment they live in (Ashmann & Franzen, 2015, p.1).

This is why the research question *What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* is so important.

Educator Training

Individuals who wish to become public school teachers, teaching kindergarten through 12th grade (K-12), must possess a wealth of knowledge and fundamental skills that promote and propel their program and students to succeed. However, on top of that, elementary school teachers must also possess a wide variety of knowledge in all disciplines. This means they must be proficient at reading, writing, math, social studies, a variety of sciences, and other related programs. When reviewing the science section (Section J) in Minnesota statute 8710.3200, Teachers of Elementary Education, there is an impressive amount of science-related material that has to be known by prospective Minnesota elementary teachers. This statute lays out the basic building blocks that a prospective teacher must know, in specific fields, depending on what they are teaching. Specifically looking at areas related to EE, the focus must be brought to Sub-section 6 under Section J. In this section, EE is not mentioned specifically by name, but components are discussed. Areas such as “the interrelationships of organisms and environments, structure and function in living systems, reproduction and heredity, regulation and behavior, populations and ecosystems and their interrelationships, and diversity and adaptations of organisms” (Teachers of Elementary Education, 2017 section J sub-section 6). Even though EE is not mentioned by name, the science sections that are

mentioned are closely related to EE and all prospective elementary educators must be well versed in this area of teaching. With that being said, elementary teachers need to know so much that there can be instances where they do not cover every section with proficiency or at all. However, in 2009, Minnesota revised its academic standards and the section of science saw changes that moved subjects to different grades and provided more inclusion for environmental concepts (Olson, 2010, p.1). A significant change in how schools operate regarding standards for students K-8 grade. Standards set for K-8 now must be met at the exact level they are placed at. Previously the standards could fluctuate between groupings of grade levels. Each grouping was made up of three grades such as K-2 and 3-5 and continued all the way up to 12th grade (Olson, 2010, p.1). While looking over Minnesota's revisions to their science standard, one can notice that the revisions were made to help both the students and teachers, providing a more structured and complete teaching and learning experience. With that being the case, the pressure is placed on the teachers to provide a wealth of knowledge to their students on specific concepts that may not be taught again for a few years (Olson, 2010, p.1). These revisions are meant to help, but at the same time elementary teachers are seen as generalists and it may be more difficult for them to solely concentrate on one or two main concepts if they're not familiar with them and do not feel comfortable teaching it.

Four decades into trying to promote and strengthen EE in the public school setting and working on the development of non-formal EE opportunities at aquariums, zoos, and nature centers, the United States environmental literacy levels continue to remain incredibly low (Johns & Pontes, 2019, para.1). Why is this the case? What is hindering

the environmental literacy levels of our students and subsequent adults? According to Fazio and Karrow (2013), part of the blame for EE floundering in schools can be placed on curriculum structures, timetable deadlines, testing standards, and other ingrained pedagogical and organizational features (p. 615). To overcome these ingrained features, schools need to incorporate a more inclusive view on how EE is taught. In the pursuit for more accessible and better quality EE for both teachers and children, there needs to be new and restructured programs developed. These additions and restructures will help new and seasoned teachers build and strengthen their knowledge and expertise in the EE field (Meier & Sisk-Hilton, 2017, p. 191).

Figuring out how EE can be integrated more effectively and efficiently into elementary schools and classrooms is imperative due to the ever growing evidence stating the importance of nature curriculum in schools (Meier & Sisk-Hilton, 2017, p. 191). However, with the growing necessity of nature curriculum in schools, also comes a need for teachers to be properly prepared to teach EE. According to Meier and Sisk-Hilton (2017, p.192) most teachers feel they can not provide an adequate and worthwhile environmental lesson plan because they are unprepared for such courses. This, for the most part, is because elementary teachers have minimal college background in science, which results in elementary teachers reporting that science is most often the field that they feel they are most unprepared to instruct (Meier & Sisk-Hilton, 2017, 192). Resultantly, this implies that when teachers first graduate with their undergraduate degree, they lack a clear understanding of how to work with the scientific field despite the required scientific knowledge to be an elementary teacher. According to Șterbuleac

and Toma (2018), universities themselves need to play a larger role in addressing the problem of unprepared new graduates in the education field. Further opportunities need to be made available to students so that they may gain experience and develop additional skills that further allow them to better understand and make educated decisions on environmental related issues (para.1).

With all the resources available and changes that have been made, are there still problems with the education process of teachers? Are elementary schools still not valuing EE even though there is a mound of positive research? What can be done to make lasting positive EE change in elementary schools? Questions like these are another motivating factor behind the research question: what *are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?*

Teacher Perceptions about EE

Teachers can have different perceptions about EE for a variety of reasons. From past personal experiences, how they were taught to teach, and personal views can all lead to how EE is viewed. There is no one specific way that all teachers feel about EE, and related fields, and how it's managed in schools. Each individual's perception of EE is their own personal feeling towards it. In this section I will try to provide a base understanding of how teachers relate to this topic and how that transfers into EE being introduced into classrooms.

Taking a second to step back slightly into early childhood (pre-k) we can see that EE is already something that is a challenge for the teachers. According to a qualitative case study on pre-k teachers done by McClintic and Petty (2014), the teachers felt that

outdoor play was paramount to the development of kids. However, there was a distinct lack of knowledge and motivation to push it into an accepted norm for pre-k teachers. The perception about outdoor play, which is a precursor to EE, is that it's valuable but unattainable in the current instructor format. If this is already a concern for teachers in pre-k then EE is already a step behind for students as they progress through elementary school.

Environmental Organizations

Elementary teachers have the ability to utilize environmental organizations to infuse EE into their classrooms for a variety of reasons. Teachers may utilize EE organizations for support when they have challenges in understanding or teaching EE subjects, difficulties generating ideas for EE projects for their students, or simply for when they want to include additional environmental information. In general, environmental organizations can be utilized on the local, regional, state, national, or federal level. From these various organizations, educators can find numerous EE resources from literature to lesson plans and onsite education. Additionally, organizations such as the Minnesota Department of Natural Resources (DNR) have an assortment of offices located throughout the state, while also maintaining a large online presence. Online, the Minnesota DNR website (2019) provides an extensive list of materials that are accessible for classrooms by going to their website and downloading the content that's needed or wanted (p. 1). These activities are made available to teachers to help promote EE and assist them in constructing EE that may otherwise be a challenge for them. On a more local platform, the Minnesota DNR also offers programs such as the

Minnesota School Forest Program. This program encourages educators to teach outdoors, supports schools to extend the classroom into the outdoors, and advises on forest management (2019). This available offering aims to engage and encourage teachers and their students to broaden their knowledge base while providing them support along the way. Furthermore, the Minnesota School Forest Program, provides specific locations throughout the state that registered schools and forest staff may utilize together to both educate and foster interest in students to learn more about how to create a positive impact on the environment. However, schools must meet specific conditions to continue participating in the program, meaning that EE is continually highlighted and given focus within its curriculum whilst also teaching its overall importance (School Forest Program - Minnesota DNR, 2019).

Moreover, the Minnesota DNR offers additional EE resources set in varying structures for elementary educators so that they may further their own knowledge regarding EE, or use it to supplement their EE needs. The Minnesota DNR along with other organizations use a teaching style called non-formal education. “Non-formal learning occurs in a planned but highly adaptable manner in institutions, organizations, and situations beyond the spheres of formal or informal education” (Eshach, 2006, para. 8). In general, non-formal education programs are held out of school and can be accessed by the general public, or set up by schools as field trips. In respect to field trips, the students along with the instructors are involved and both groups can learn from this experience. Being actively involved with the lessons of the presenting expert, the teachers have the ability to learn and or potentially gain resources from these organizations. In this

setting, staff from the environmental programs lead the learning experience. Teachers are able to take part in the activity, or take more of a secondary observation role. Places that may offer non-formal education include, but are not limited to, zoos, museums, nature centers, and other environmental based organizations (Johns & Pontes, 2019, para. 5). Other environmental-based organizations such as the Jeffers Foundation, also offer workshops specifically for teachers. The workshops offered by the Jeffers Foundation are structured around offering high level content to teachers to help them achieve the level of EE they desire without adding the burden of additional cost or work to them. Any teacher that participates in the workshops will gain the tools and resources needed to set them up for success. Each workshop offered has the ability to be modified and molded to meet any specific schools or group of individuals needs or wants (Jeffers Foundation workshops, 2019. para. 1). As a whole, all of these organizations offer some degree of EE for students and educators. They offer the opportunities for teachers to learn and grow their methods and become inspired as to how EE can fit in their own classrooms and be molded into a more learner friendly subject.

School Constraints

In the context of this thesis and specifically this section of the literature review, *constraint* will refer to a school's limitations or restrictions that can affect rural Minnesota elementary teachers' ability to properly teach EE to their students. Anything relating to how a specific teacher feels about the subject material and their restrictions or limitations, is covered in the sections titled *Educator Training* and *Teacher Perceptions*

about EE. This section will look into how the school system as a whole may impact the way EE is approached or whether or not it is taught to any degree.

There can be a multitude of reasons why constraints in elementary schools may affect how teachers navigate EE. Each school system may have similar challenges or limitations, but there can also be specific obstacles within each individual school. With that being said, the largest overall constraint that affects the majority of Minnesota public schools is budgeting. Even though the budget for education was boosted in 2019 by $543 million by the Minnesota Legislature, there are still school districts that say this will not be enough to stop deep school cuts in the following couple of years (Golden, 2019, para. 1). This lack of funds can create a chain reaction of other negative outcomes that can affect all elementary schools and can lead to difficult choices. According to Gary Amoroso, executive director of the Minnesota Association of School Administrators, some school districts will still have to take on challenging choices when it comes to budgeting, in terms of what programs are cut or reduced. This decision would also affect staffing, class size and other areas related to those decisions (Golden, 2019, para. 3). Sometimes those situations created by limited funding can, in turn, exacerbate current problems or create new concerns .

With larger class sizes and smaller budgets, the time and flexibility of teachers to create unique learning environments becomes harder. Trying to keep up with pedagogical teaching standards, specific course content, and implementing well thought out teaching plans takes significant amounts of time (Markworth et al., 2016, para. 4). EE itself requires significant amounts of prep time for teachers who have proficient knowledge of

the subject. If the elementary teachers are not knowledgeable or do not feel comfortable teaching EE, then the prep time spent on it can be drastically increased. That increase in time can be hard to justify or fit into an already tightly packed day of prep for other classes. Since elementary teachers are viewed as generalists in the teaching world (Markworth et al., 2016, para. 4), they have to teach multiple subjects that range throughout all fields of elementary study. Being a generalist like this means prep time is at a premium when structuring the class day. Elementary teachers' ability to class prep was significantly changed even more when the federal government enacted the No Child Left Behind Act (NCLBA) back in 2002. The NCLBA required any teacher that taught a core academic subject, as defined by the act, to meet high qualification standards. This meant teachers were leaving college with bachelor's degrees that focused on highly specific knowledge in one area of teaching (Ladd, 2017, p.461). Teachers already in the field had to adjust their ability to prepare for classes that would adhere to the new federal government standards. As mentioned earlier in the literature review, EE has the ability to be flexible and work with other courses, but that can also be its biggest fault because it’s not a designated formal subject of its own. This means its curriculum can be the first to be cut or restructured when budgets are slashed (Monroe & Kransy, 2015, p. 23) or when education policies like the NCLBA are implemented .

Other possible constraints in elementary schools regarding EE is that parts of its curriculum, even though retained, can become quite altered. This can also lead to a shortcoming in school wide EE literacy as only the most basic information is conveyed and preset learning structures may not be in place.. More often than not, teachers are

burdened with the responsibility to coordinate EE in schools when other formal leaders such as principals, should be taking on that role (Fazio & Karrow, 2013, p. 615) but cannot fulfill their duty due to budgeting issues and teacher shortages. When the leadership structure is bypassed and teachers are put into roles not designed for them, their responsibilities can be stretched to a point where their comfort and ability level is overwhelmed.

Summary

The literature in this section provides insight into what EE is and how it has evolved over time, the importance of educator training, how educators themselves perceive EE, how environmental organizations can help, and how school constraints can affect how EE is received and taught in elementary schools. Each topic area that was covered in this section lays out a thoughtful look at how EE in general is perceived and handled by educators and how specific ideals and constraints can hinder the process of providing EE in elementary schools. In Chapter Three I will review and describe the research method and data analysis utilized to help answer the question: *What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?*

CHAPTER THREE

Methods

Overview

What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education? This is the research question I proposed at the beginning of this thesis. I've laid out my connection to, or lack thereof, EE in elementary school and why I find this topic to be important. The goal of this thesis is not to critique teachers on their abilities, but to better understand how EE is viewed and utilized by rural Minnesota elementary teachers. To accomplish this goal, I first talked about what EE is as a whole and how the idea of EE developed into what it is today. I then went into detail about potential barriers and limitations that could hinder how rural Minnesota elementary teachers teach EE. From there I looked into environmental organizations that could offer assistance and support with EE. This could be from offering on site experiences, providing material to teachers or offering experiences that come to you in the classroom. In Chapter Three I will focus on the study itself. Specifically, I will look at the research methods that were necessary and why it was vital to navigate my exploration of this topic in such a way. Next I look into the response of the participants themselves, the data collection tools, and data analysis.

Research Methods

There are three specific ways to collect the research data: quantitative, qualitative, and mixed methods. A mixed methods approach was needed for this study to properly gauge how the participants felt about their preparedness to teach EE. The mixed methods

procedure is a research method that blends quantitative and qualitative data retrieval into a functioning research study (Creswell & Creswell, 2018, p. 14). There are a few different variations to the mixed methods designs. However, the specific approach used in this thesis is the convergent mixed method. In this method both quantitative and qualitative data are gathered at the same or close to the same time, allowing a comprehensive analysis of the question at hand to be completed in a quick and effective manner (Creswell & Creswell, 2018, p. 15). To collect all the data that is needed for this thesis, I conducted an online survey. The convergent mixed method provides the opportunity for me to use one survey that includes both quantitative, close-ended, questions and qualitative, open-ended questions. The quantitative questions are there to set a baseline understanding of how rural elementary school teachers in Minnesota view EE and to set up the qualitative questions that ask for more detailed responses. It's imperative to include the qualitative questions, because each individual will have a different reasoning for answering as they did on the quantitative questions. When constructing this survey the questions were meant to reflect aspects related to the research question: *what are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?*

Setting

The area of focus for my study is rural Minnesota elementary schools. With this being the case I wanted to stay away from the metro area, specifically Minneapolis, St. Paul, and all of their first and second ring suburbs. This is to ensure that I solely receive representation from rural Minnesota. To help me interact with rural teachers throughout

the state, I decided to split Minnesota into three sections consisting of Northern, Central and Southern Minnesota. The methodology used to decide upon these areas is simple and developed specifically for my use in this thesis. When I looked at an image of Minnesota, I envisioned two lines running from the Dakota borders to the Wisconsin border. The first line ran straight through Duluth with all the land above considered the Northern section . The second line ran through St. Paul creating the central and southern sections. I randomly selected and contacted 43 public elementary (K-6) schools. I sent emails out to the principals of each school asking permission to survey their teachers. If the principals agreed to the survey they forwarded my survey link onto the teachers. This is a blind study so I am unaware of what principles agreed to this and what teachers took the survey. To ensure representation of each section of the state, I sent out surveys to no fewer than three schools per section. This was also to help ensure that I was not collecting data from one specific county or region in Minnesota. The research was conducted during October 2023 through the first two weeks of November 2023. This was meant to help provide a more meaningful response to the survey questions, by allowing teachers who were restructuring, moving to different grades, moving to new schools, or who were brand new to teaching, time to get acclimated to their classroom and curriculum.

Participants

The participants in my research are rural Minnesota elementary teachers, representing grades K-6, and are from all around the rural parts of Minnesota. They can be from both standard public schools or charter schools. There is no distinction between

the two for this survey. The participants were asked to answer survey questions related to the research question: what *are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* The collection of responses from teachers within different grade levels and in different locations of the state was meant to provide a wide variety and mixture of personal views, teaching styles, school situations and environmental factors. All the participants in this survey have equal importance in this research project. No specific grade level or specific participants' answers were valued higher than the others. All answers to the survey questions were viewed and analyzed in an ethical manner. All of the teachers that participated in this research project did so on a voluntary basis.

Data Collection Tool

I used Google forms to make my survey and to collect my research data. A single survey was conducted to collect all data. The use of yes or no quantitative questions were used to gain a numbers based understanding of each participant's feelings toward each question asked. The accompanying quantitative rider question asking participants to please explain their thoughts and reasoning is the base to understand how each individual reacted to the question on a personal level. The expansion of the quantitative questions into qualitative provides the best mixed method approach for the teachers being surveyed. The questions were set up in such a way as to get a wide view of how the respondents feel about EE and what may be reasons why they do or do not use EE in their classroom. Questions like: do you feel prepared to teach EE, are school constraints hindering your ability to teach EE, and does your school system provide materials, opportunities,

continuing education, or funds for EE along with others help set up each individual respondent's views on EE. When creating the survey I continuously thought about how to keep my questions related to the literature I reviewed and my research question. I also tried to make the survey brief enough that teachers could complete it when they had breaks within their day. The exact questions used in the survey can be found in the Appendix.

The survey was created specifically for this research project. All the questions were thought of and crafted by myself, along with input from my reviewers. Additionally, assistance with question composition was received from a rural elementary school teacher who assisted with clarity of questions, formatting, and provided additional perspective on rural education practices.

Ethics

To make sure I uphold the ethical standard of educational research, I received approval from Hamline University's Internal Review Board (IRB) before conducting my survey. The survey was sent out with a disclaimer and each respondent would have to click agree to progress onto the rest of the survey. Everyone that participated was anonymous to give them privacy. No names, or any other descriptive questions were asked and all answers were saved on a password protected university email.

Data Analysis

The EE survey I conducted consisted of seven questions that contained qualitative and quantitative components in each question. The survey was active for three weeks to give the participants ample time to complete it at their convenience. A reminder email

was sent out two weeks after the initial message. Once the last week was completed, all the returned surveys were checked twice to make sure all the surveys were accounted for. Then they were analyzed and the answers were sorted into the appropriate areas to create a picture of how rural Minnesota elementary teachers view EE in their teaching field. Any surveys received after the time limit were disregarded and not used in the results of this thesis.

I read through the survey results and organized my data into the appropriate categories setting myself up to be able to chart the results properly. The quantitative responses are set up in graphs to show how each participant responded to the questions. These answers then directly transition into the open ended qualitative responses. These responses elaborate on the simple yes/no quantitative questions and help answer the research question of: *What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?*

Summary

The information discussed in this chapter reviews a lot of important areas that are essential to understanding the research process. Everything that goes into the operations of the research are represented and discussed in this section. Everything involved in this step of the process from the research tools used to the participants involved in the survey, are important. Knowing what steps were taken is key to fully understanding why the survey was taking place, what the data represents, and why knowing every detail in the process is necessary.

As I transition out of Chapter Three and into Chapter Four the focus will shift from discussing data collection to the actual collection and analyzing of the answers from the participants.This step will review all the raw data that is received and arrange it into an orderly fashion that allows for an easy understanding of the survey question answers. I will also point out any specific observations that stand out to me. I will also be looking at any themes I notice in the question answers and any overarching themes that may be present.

CHAPTER FOUR

Results

Introduction

The goal of this survey was to get a better understanding of how rural Minnesota elementary teachers viewed EE and to evaluate their confidence working with EE in their classroom. This chapter will review and analyze the data by breaking each question down and looking at trends that are revealed between each participant's responses and any trends that emerge overall. After looking over every answer from each question any trends that are found will be analyzed and a discussion of how those patterns relate to the studies' overarching question of *what are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education* will be further explored.

Data Collection

The data collected for this thesis came from 11 surveys that were gathered over three weeks. All participants were rural Minnesota elementary teachers and their answers were recorded on Google Forms. This survey was a mixed methods survey with each question, except for one, containing two parts. Every question that had two parts started out with a yes/no question and was then followed up by an open-ended question. Before analyzing, the data was placed into a spreadsheet to help with efficiency. In doing so, I kept the two part questions together in the spreadsheet, as the open ended portions were extensions of the corresponding yes/no questions. Regardless of how a question was

answered in the yes/no portion, the respondents were then asked to expand on their answer and explain why they answered the way they did.

Survey Results

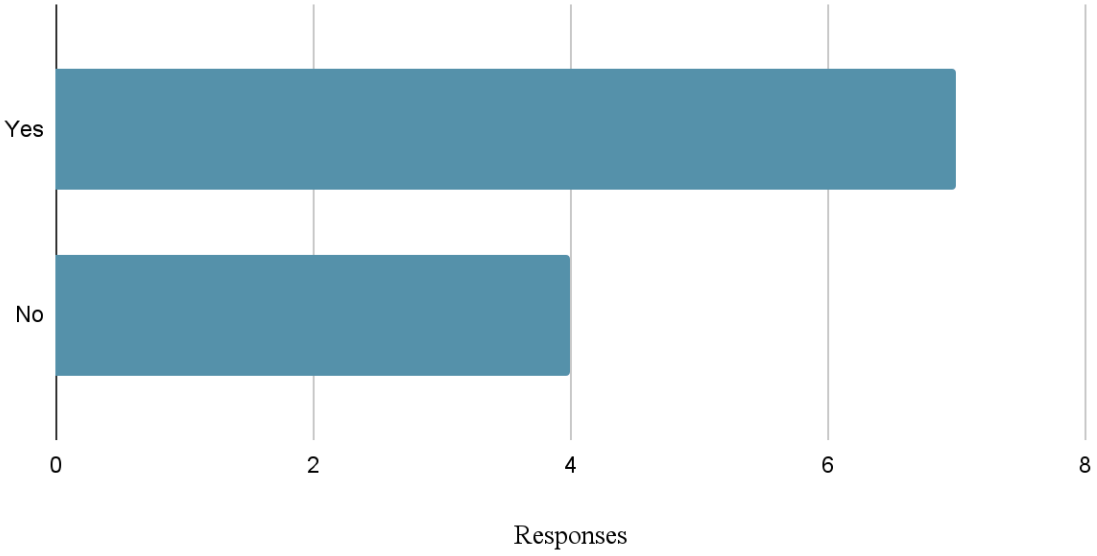
In this section of Chapter Four I will talk about the yes/no questions and open-ended question data at the same time because every question but one has both parts to it. For each question I will provide a brief summary of the answers and also highlight specific areas that stand out. After looking at each question I will also highlight any overarching trends I see in the data.

Question 1 asked each respondent what EE meant to them and specifically how they valued it personally. This was the only open ended question, which meant that every answer varied, but there was still a trend that emerged. The majority of the respondents stated that EE was important for kids so they could understand and interact with the world around them. There were three respondents with slightly different answers that were still similar. The three responses that were different did not mention children at all, but referenced people in general and implied that EE was valuable for education and reasoning. Even though this Question 1 was meant for a personal view of how the respondents felt about EE, the vast majority referenced how important it was for children specifically.

Question 2 asked if the respondents incorporated EE into their curriculum. As shown in Figure 1, there was a majority that did incorporate EE into their students' studies.

Figure 1

Is EE Incorporated into Your Teaching?

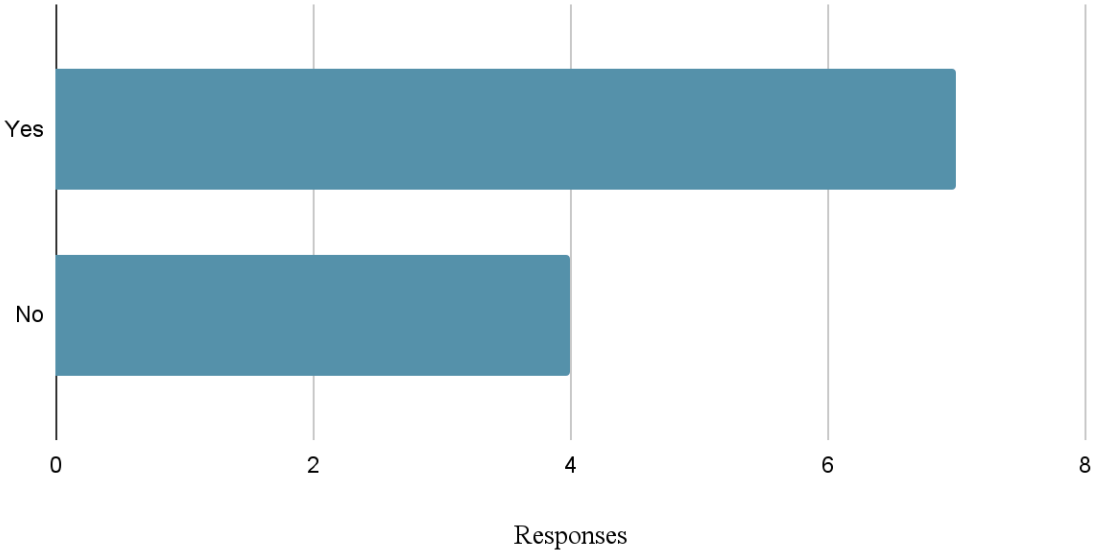


Out of the 11 respondents, four of them said that they do not incorporate EE into their curriculum. The seven respondents that do incorporate EE in their teaching gave examples of how they include EE in their classroom. Some talked about specific lessons they teach, while others indicated that they use out of classroom resources. Of the four that do not include EE in their teaching, one stated they just moved to a new school while the other three stated they couldn't find time in their curriculum to specifically teach EE.

In Question 3, I asked if they felt prepared to teach EE in their classroom. The yes/no answers were identical to the previous question. Seven respondents said "yes" and four of them replied with "no". Results are shown in Figure 2 below.

Figure 2

As An Educator Do You Feel Prepared To each EE In Your Classroom?



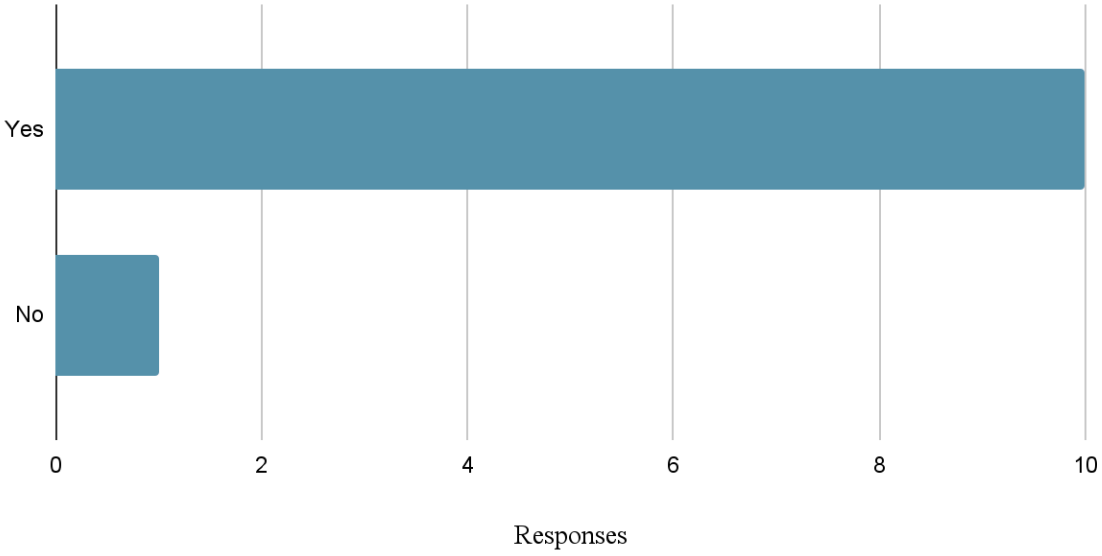
The respondents that answered "yes" to the open ended portion gave varying examples of why they feel comfortable, such as having a masters degree in EE, extensive continuing education, additional resource material, and having a specific person or place they can go to learn about EE and related subjects. There was also one instance of a participant also expressing that they would like to learn more to better grasp EE. The four participants that answered "no" all indicated that they had little to no training in EE and would be out of their element teaching about it.

In Question 4 I asked if teaching in a rural area affected how EE was taught. An overwhelming majority of respondents, 10 out of the 11, said "yes" teaching in rural areas affects how EE is taught. Everyone who answered "yes" had very similar reasons as to why rural was better for EE. The ease of access to the environment was the most

common, followed by outdoor learning opportunities with trained EE instructors. Results are shown in Figure 3 below.

Figure 3

Do You Think Reaching In A Rural Area Affects How EE Is Taught?



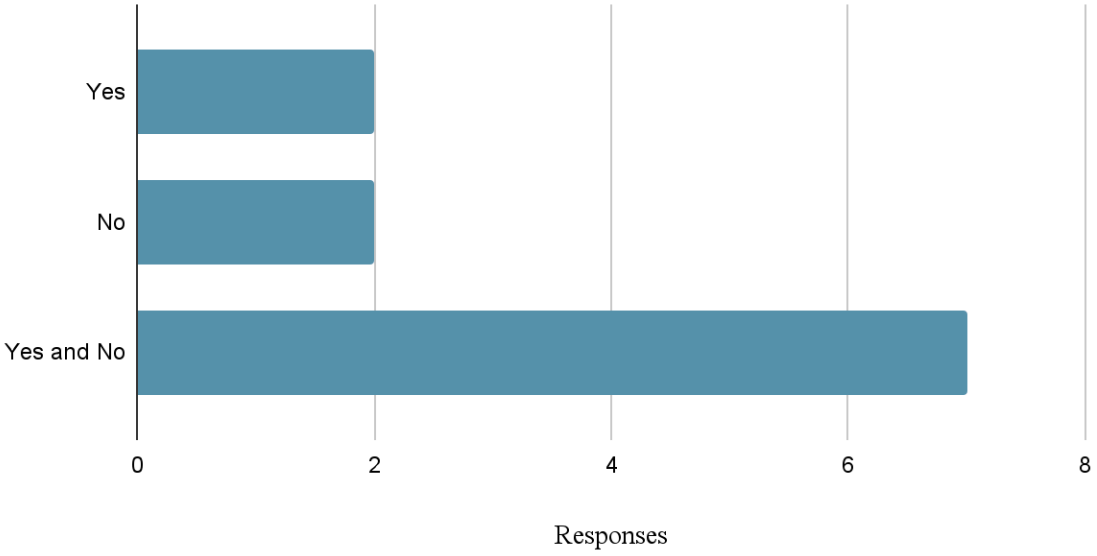
The lone respondent that answered no gave a compelling answer as to why living in a rural area doesn't affect how EE is taught: "Environmental problems are everywhere and the use of technology makes seeing problems around the world easier."

In Question 5 I asked if their schools provided materials and other resources/opportunities for them. With this question, the yes/no data is segmented into three separate categories. The three ways are: yes everything is provided, no nothing is provided, and yes/no some things are provided, but some are not. As shown in Figure 4 below, two respondents answered with "yes", two answered with "no", and seven

answered with “yes and no”. The yes/no information shows that a majority of these schools provide some resources for EE.

Figure 4

Does Your School System Provide Materials, Opportunities For Extracurricular Activities (

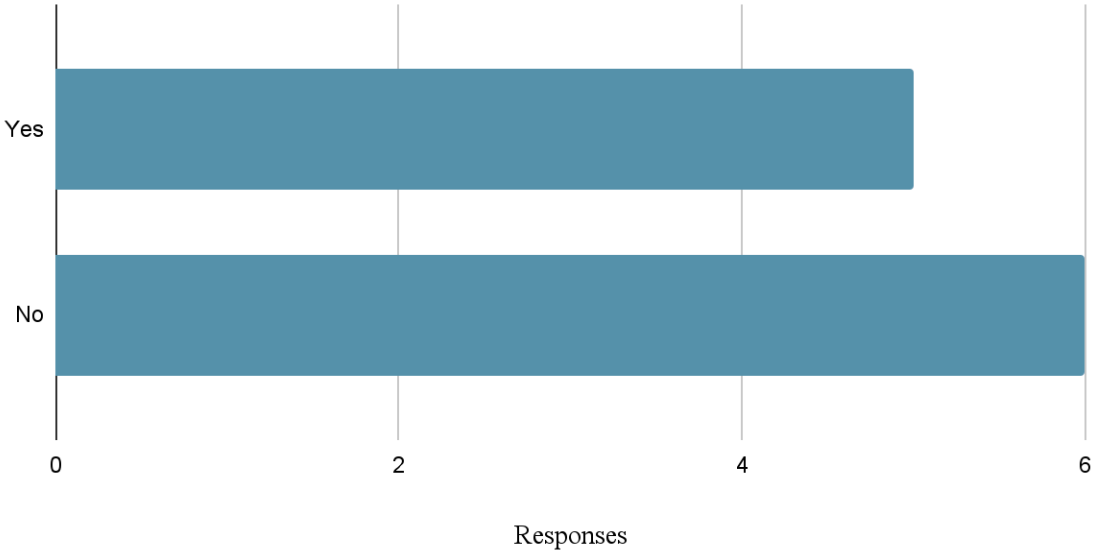


The data for this question was harder to quantify as the different respondents wrote similar explanations, while answering the first portion of the question differently. For the yes everything is provided option, the respondents stated everything they had asked for was granted and that local field trips had always been covered as well. For the two respondents that said nothing was provided, one stated that there was not enough funding and the other stated they were unsure of why more wasn't provided. As for the yes and no respondents, most stated that they either had access to texts, continuing education or that they had the ability to utilize field trips. However,they did go on to mention that funding was either not specific for EE or was lacking. They also mentioned receiving additional text and materials would be beneficial as well.

In Question 6 I asked if school constraints hindered their ability to teach EE. Of the 11 respondents, six respondents answered “no”, school constraints do not hinder their ability to teach EE and five respondents answered “yes”, school constraints do hinder their ability to teach EE. Results are shown in Figure 5 below.

Figure 5

Are School Related Constraints Hindering Your Ability To Teach EE?



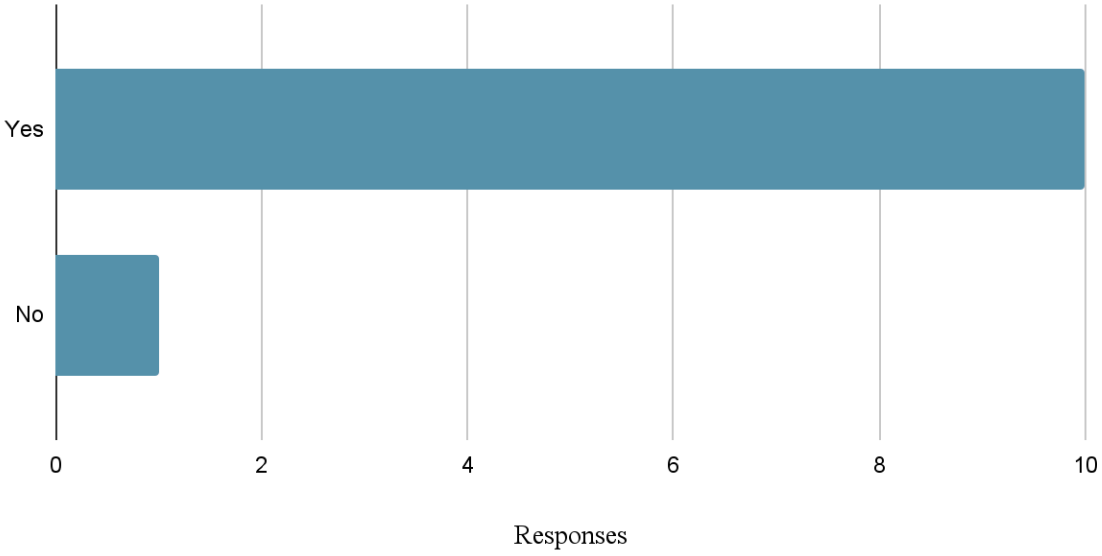
The open ended responses to this question paint a slightly different picture compared to the yes/no question. Of the six respondents that answered “no” to the question, two of the responses were difficult to interpret. However, the other four respondents that answered “no” mentioned that they had supportive schools for EE related activities. The remaining five respondents that answered “yes”, school related constraints are hindering their ability to teach EE, provided nice explanations. The two main themes were that there is not

enough time in the day to teach about EE because of core subjects and that there is a lack of materials provided for EE.

Question 7 I asked if more training and resources would be beneficial to their EE needs. The overwhelming majority, ten respondents, answered “yes” and only one respondent said “no”. Results are shown in Figure 6 below.

Figure 6

Do You Feel More Formal Education, Additional Training, or Supplemental Resources



The open ended question results reflect the yes/no data very well. Everyone who answered yes had similar statements saying additional training and supplies would be helpful. However, to go along with the yes results, there were also some concerns tacked on that matched up with the no statement. The lone no statement said that the current state standards and curriculum didn’t leave much, if any, room for additional learning. Two of the yes statements also voiced those same concerns.

Themes

There were a few themes that came through that reflect the thesis question: *what are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?*

The first theme is that respondents view EE as a positive in elementary schools and the majority of teachers incorporate EE in their teaching. Even if they do not include it in their curriculum, the teachers still valued EE. One respondent said, "I place high value on EE, both from education standpoint and reasoning skills" in regards to what does EE means to them and the value they place on it. The second question asked is EE incorporated into your teaching? A respondent answered no and said "really no reason with the exception thatI have no curriculum in my areas of teaching." This theme is present in some way, maybe not as drastic as the example, throughout the survey.

The next theme that was present was how much third party help, experts, were used. A lot of the respondents talked about outdoor learning areas/centers and other expert led places they attend to help them teach EE. One of the respondents said, "Our 5th graders get to go to an outdoor learning lab for a day called 'Conservation Day' in September. They learn from experts about topics like invasive species, mammals, furs, trees, waterfowl, reptiles & amphibians, geocaching, composting, etc…" Another respondent said, "Our school has a partnership with an outdoor learning lab and instructor that we can attend countless times for free." These are just a few examples of respondents talking about expert help at nature centers or learning labs.

The last theme was the need for more teacher education. This was mentioned by multiple respondents who pointed out that they simply had limited to no training. For example, one participant noted,“I haven't had any training on EE and would not feel comfortable teaching my students about something I am not well-versed in.” Others pointed out, “I feel prepared enough, but definitely don't have a lot of background in this area. I'm always willing to learn” or that “I always feel unequipped in any outdoor lesson I have to lead solo”. On the other end of this spectrum were the respondents with extra education and how it benefited them. One respondent commented, “I have a masters in EE”. While another respondent stated “I have attended may [*sic*] National Geographic continuing education classes in North Dakota.” These two responses show both a formal and an informal approach to continued EE education for teachers.

With the sample size being small for this study, it is hard to fully answer the thesis question: *What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* However, with the data that was collected, it does provide themes that can be further explored. These themes provide a snapshot of what this thesis was looking for, specifically looking at how education, either formal or informal, may influence how the respondents feel about EE. Those that had little to no training in EE disregarded it as a viable course, even though they thought it was important. Those that had some training in EE valued it more in the classroom, but did not fully understand everything in EE they needed or relied on outside experts to make up for what they lacked. Those who had the most training in EE seemed very

secure in using their own skill to set up the learning experience and using the outside experts as tools rather than the whole course.

Summary

In Chapter 4 I looked over all of the yes/no answers and the open ended answers that were provided to me from the survey. The yes/no and open ended responses in each question complemented each other for the most part. However, there were a few instances where the two data sets in each question were a little different. No matter how the respondents answered, it provided good feedback for this survey. The other major focus of Chapter Four was the themes in the survey. There were multiple themes that were noticed in the data and discussed. These themes helped me answer my question, *what are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* In Chapter Five I go over the conclusion of this thesis by connecting my findings back to my literature review. I will also talk about what I've learned about myself doing this thesis and what opportunities there are for continued research for myself and others.

CHAPTER FIVE

Conclusion

Introduction

Chapter Five contains my thesis conclusion. In this chapter I will summarize my survey findings for my thesis question: *What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?* After looking over the findings, I will tie the results back to the existing literature. Following that I will evaluate my survey limitations, recommendations for future research and what I have learned from this experience.

Results and Literature Review

I first asked all the respondents what EE meant to them and what value they placed on it. All the responses were very positive about EE and the participants agree that EE is important. I continued on by asking them if EE was incorporated in their teaching. Four of the eleven respondents said no it was not. Answers like "No room in the curriculum" and "There is no time in my day to cut out for specific EE learning" are what stood out to me. These answers directly overlapped with Markworth et al. (2016) when they note that trying to keep up with pedagogical teaching standards, specific course content, and implementing well thought out teaching plans takes significant amounts of time. Those same responses also match up somewhat with what Fazio and Karrow (2013) stated when they said part of the blame for EE floundering in schools can be placed on curriculum structures, timetable deadlines, testing standards, and other ingrained pedagogical and organizational features.

Another area of overlap between the survey answers and the literature is when Meier and Sisk-Hilton (2017) said most teachers feel they cannot provide an adequate and worthwhile environmental lesson plan because they are unprepared for such courses. This section of the literature reflects various responses to the survey. On one hand you have survey respondents answering "I haven't had any training on EE and would not feel comfortable teaching my students about something I am not well-versed in". Another stated "I feel prepared enough, but definitely don't have a lot of background in this area. I'm always willing to learn" and finally the last response "I have a masters in EE" does not really overlap so much as it highlights the degree of education this participant was willing to seek out to be able to incorporate EE in their curriculum.

Finally, my findings did differ somewhat from the literature I reviewed on environmental organizations. In the literature I talked about how elementary teachers have the ability to use environmental organizations to assist with their EE teaching. Organizations such as the Minnesota DNR which provides an extensive list of materials that are accessible for classrooms by going to their website and downloading the content that's desired (2019). Another organization, the Jeffers Foundation, offers workshops for teachers and allows them the ability to modify the programs as needed to meet any specific schools or group of individuals needs or wants (2019). Some respondents mentioned another specific outdoor learning environment that has an expert on hand that leads EE lessons. Along with that, there was a respondent that said they used workshops sponsored by National Geographic.

Survey Research Limitations

Surveys by nature have their limitations when trying to collect data. It doesn't matter what the length of a survey is; it all depends on if the recipient wants to participate. This was the key limiting factor for my survey. I sent out 43 emails to randomly chosen rural Minnesota elementary school principals. Each email contained my survey link and a brief message asking them permission to survey their teachers. If the principals gave permission, they would then share my survey link with their teachers. After the teachers received my survey link, they could either answer my questions and participate in or disregard the survey. Out of the 43 emails I sent out, I have no way of knowing how many principals agreed to my request and forwarded my email on to their teachers. I also have no way to measure how many teachers looked at the survey and disregarded it or never viewed it. All of these unknowns may be partly why I only received 11 responses in three weeks. Regardless of the response number's size I was still able to collect valuable data.

Future Research

The research on my question, *What are rural Minnesota elementary teachers' views regarding their preparedness to teach environmental education?,* may have been inconclusive on a larger scale, but when evaluated on a smaller scale, I was still able to answer my question. However, I believe there is huge potential for more research into how rural elementary teachers view EE and the countless offshoots that can come off this particular research subject. There are a few areas I would continue to look at in this subject area.

Continued research on questions similar to mine is important, I just scratched the surface with my survey. A larger survey could encompass more rural elementary teachers and set up an effective way to get more responses would be able to get a better statistical part built up and also be able to identify areas that are lacking and areas that are expanding with EE. Continuing on the same course that I did with my research will be a lot of work for whoever tries to tackle it, and with this base research will come many other questions and answers.

Also comparing the preparedness to teach EE of rural and urban Minnesota elementary teachers would be beneficial. Looking into their understanding and practice of EE and to see if having access to the outdoors really makes a difference. I specifically reference this because my survey gave feedback that just because there is access to the outdoors does not mean it is taken advantage of. I think viewing it from both an urban and rural perspective would highlight what is considered a need in the EE field.

A difficulty I encountered that I believe could be further improved upon in future research, or turned into its own research, is the survey limitations I had. There should be a more efficient way to engage teachers than relying on principals to forward emails or putting the link into a weekly newsletter. Both of these methods are inefficient and can easily be overlooked and or accidentally lost in the email inbox because of the amount of work that each principal and teacher does. I know trying to get more teachers involved can and most likely will be hard, but figuring out a better way to make this happen will also aid anyone who pursues future research into this subject.

What I learned about myself

As I progressed through this thesis, I was met with a lot of questions about myself and how I could complete this research. Up to this point in my academic career I had never undertaken such a large body of research. Trying to balance that research with work and a home life was tough for me all the way through this process. One of the biggest challenges was when the 2020 pandemic occurred. I experienced a lot during that time, some good and some bad. Tending to those parts of my life came first and because of that my thesis sat idle for three years before I was able to pick it back up and keep going. After I restarted my thesis I was met with frustration because I was progressing slowly and my survey did not go quite according to plan. Despite all that I was still able to collect good data and all the other problems I encountered worked out as I progressed. When I got to the end, it made me reflect and think about the people I surveyed. They all have struggles they want to get past, skills they want to learn or goals they want to achieve. Just because you have little to no exposure to something, EE in the case of respondents, does not mean you can not choose to learn or gain those skills. This thesis taught me that patience and persistence is key to fulfilling the goals you have set for yourself.

When you do a lot of research on a subject and make a survey to collect data it tells a lot about who you are. It shows that you are committed and determined to see your question be answered. That question could be simple or complicated, brand new or an old question that has lingered in your mind for years. Your research may unlock more questions or answer questions you weren't even asking. That's the beauty about research,

it is constantly changing because we as a people are constantly changing. Hopefully those who look over your work and study it realize that as well.

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Appendix: Survey

The following questions are the exact questions that each participant responded to on their survey.

1. What does Environmental Education (EE) mean to you, what's the value you place on it?
2. Is EE incorporated into your teaching? Yes/No
    a. If yes please provide a(n) example(s) of how EE is incorporated into your teaching.
    b. If no Is there a reason EE is not included in your instruction?
3. As an educator do you feel prepared to teach EE in your classroom? Yes/No
    a. If yes, please explain what preparation or training you have had.
    b. If no, please explain why you feel unprepared
4. Do you think teaching in a rural area affects how EE is taught? Please explain
5. Does your school system provide materials, opportunities for extra curricular activities (i.e. field trips), continuing education (i.e. workshops, lecturers), or funds associated with EE in your school? Yes/No. Please explain.
6. Are school related constraints hindering your ability to teach EE? Yes/No. Please explain.
7. Do you feel more formal education, additional training, or supplemental resources would be beneficial to your EE needs? Yes/No. Please explain.
    a. If yes please explain what forms of education would help you.
    b. If no please explain why.