LINKING ENVIRONMENTAL EDUCATION CENTERS CURRENT CURRICULUM TO NATIONAL PHYSICAL EDUCATION STANDARDS

A Project Report

Submitted in Partial Fulfillment of the Requirements for the Degree

MASTER OF SCIENCE

IN

NATURAL RESOURCES ENVIRONMENTAL EDUCATION/ INTERPRETATION

College of Natural Resources

UNIVERSITY OF WISCONSIN STEVENS POINT

by

Melissa Perry

May 2015

APPROVED BY:

_____

Dr. Corky McReynolds
Professor and Director of Treehaven

_____

Dr. Randy Champeau
Professor Emeritus

_____

Dr. Brenda Lackey
Associate Professor of Environmental Education and Interpretation

_____

Dr. Dan Sivek
Professor Emeritus

ABSTRACT

Environmental education centers (EECs) provide quality programming to school groups. Often this curriculum is science based. EECs strive to meet the needs of their school audiences. One way that EECs meet their curriculum is to incorporate outdoor recreation activities such as canoeing and kayaking. These activities also are meeting some physical education standards as well. Research has shown that movement can improve learning by allowing students another way to interact with material being taught. Outdoor recreation as a means to educate students' sets up a both experiential and place based learning strategy. This gives students opportunities to interact with material on a variety of ways, and give context to abstract concepts.

Many EECs use outdoor recreation as a method to meet their teaching techniques. By meeting physical education standards through outdoor recreation EECs can give more to their audiences, without adding to current curriculum. Physical education funding has been cut in many places across the United States, at the time where we have a problem with obesity. If EECs are able to provide this service to their audiences this could prove valuable for both EECs and visiting schools. I interviewed EEC education and executive directors and analyzed them. From this I determined how important outdoor recreation was to their programming and how they were meeting physical education standards. I found that EECs are meeting four out of the five physical education standards. Within my study I have also determined that EECs providing outdoor recreation activities to everyone is a valuable service to maintain to healthy population of people. Recommendations for future research are interviewing educators, doing case studies, and tracking the amount of physical activity students get per day.

ACKNOWLEDGEMENTS

I'm grateful for the assistance and expertise of my advisor, Dr Corky McReynolds, as well as my graduate fellow coordinator, Fran McReynolds. It is with their guidance, patience and ability to ask good questions that I completed this project. I'd like to thank the dedicated staff at Conserve School for their constant support and understanding. I would also like to thank the individuals I interviewed for this project. Without their thoughts and opinions I wouldn't have had the rich data I did.

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CHAPTER 1: INTRODUCTION

Statement of Problem:

The purpose of this project is to identify how environmental education centers current field science curriculum are meeting national physical education standards. The outcome of the research will be a best practices approach for linking environmental education centers current practices and physical education standards.

Statement of Sub-Problems

1. Find several non-formal environmental education centers (EECs) that have developed field science curriculum. In order to be involved in this study they must have a written educational framework, an educational coordinator and educators.
2. Find ways in which EECs are using movement and learning in their curriculum.
3. Find links where curriculum for field science and physical education already exist.
4. Develop a manual of best practices for integrating EE and physical education.

Background

Environmental Education Centers (EECs) that are engaging students in a field based science curriculum are also meeting national physical fitness standards. The setting at an EEC requires students to be physically active in order to engage in curriculum. For example, an

educational center that has students participating in water quality studies using canoes is teaching students both physically and mentally. The intersection of critical thinking and physical activity is a strength of EECs.

At an EEC students will spend the majority of their time outside. This forces the students to be active throughout the day; when the classroom is hundreds of acres of forest, students cannot study it and gain meaning unless they explore it. The amount of walking a students does to explore and learn with their outdoor class is directly linked to the goal of national physical education "The goal of physical education is to develop physically literate individuals who have the knowledge, skills and confidence to enjoy a lifetime of healthful physical activity" (SHAPE America , 2013).

Many of the EECs focus not only on science curriculum but also fostering soft skills such as communication and respectful behavior. Doing team building and leadership activities promotes a sense of community among the students. This is not only directly related to behavior of students while at the center but also meets a physical education standard. "The physically literate individual exhibits responsible personal and social behavior that respects self and others" (SHAPE America , 2013). Team building and respect are often major components of an EECs curriculum. Staff of a center will often model what responsible and respectful behaviors to students. Respectful behavior often will go far beyond respecting each other, it also encompasses respecting the environment. By teaching students how to be respectful in many ways EEC is creating an interdisciplinary curriculum for the students.

When students are excited to be there and having fun they are motivated to learn. Staff will often inspire students with their enthusiasm for a particular activity. This fun atmosphere

instills positive values for the students about the skill be taught. For example, a class about cross country skiing is best done when students feel they are having fun. This positive emotion attached to the skill will help a student value the activity. EECs strive for students to value the natural world and will try to make it fun for students to be outside. As a result, students will also value the activity. This meets another standard of physical education, that a student "recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction" (SHAPE America , 2013).

As a result of students being on site for a short amount of time a center will often try to give students a basic knowledge of many ways to enjoy and study nature. They will do this through a variety of activities. Depending on the EEC they could be meeting the standard of "the physically literate individual demonstrates competency in a variety of motor skills and movement patterns" (SHAPE America , 2013). By offering students a wide variety of physical activities during their stay a center has the opportunity to meet this standard.

Researching different EECs will give me definitive answers to whether they are, or aren't meeting physical education standards. Centers will be chosen at random from across the country. They must have a field science curriculum and have a residential component. Directors of these centers will be interviewed with questions aligning to the physical education standards. From there the interviews will be qualitatively analyzed using grounded theory.

The responses to the interview will be used to create a best practices guide. This guide will aid EECs in recognizing where they meet physical education standards within their current curriculum. This guide will also give the EECs ways in which to improve upon already established practices or incorporate new methods or practices.

Importance of Study

This study will attempt to find way in which EECs are meeting national physical education standards within their current curriculum. This will highlight an interdisciplinary approach already in place. Memory retention is higher when physical movement is combined with learning (Sousa, 2011). This interdisciplinary approach will provide more connections between recreation, healthy living and knowledge about the natural world.

In the United States the funding for physical education has decreased over the last twenty years. This has led to schools having to cut physical education class and combine it into rest of the school day. Classroom teachers who aren't trained in physical education are forced to find creative ways to include this with other topics such as English and Math (DeCroby, 2005). By not having a specialist teacher to guide students in physical education the curriculum has suffered. If EECs can meet physical education standards this will not only benefit the center but schools who are forced to make difficult choices regarding their own physical education classes.

Diabetes, obesity and other health related issues due to unhealthy lifestyles are on the rise in the United States. Students are not only not getting enough activity but less likely to be eating a healthy balanced diet. The public school system supports sitting at a desk before it supports engaging physically in activities outside of physical education class. Physical education is a valuable class where this knowledge is taught in schools. However with current funding trends some schools have been forced to cut this class out of their curriculum. The value of a physically active lifestyle is being drained from the United States, to the point where our physical education

classes are out of funding. From this a student can receive the message that a physically active lifestyle isn't important because it's not supported financially.

National physical education standards are not only about sports, but instead focus more on valuing physical education and healthy lifestyles. Adult obesity is the leading cause of health problems in the United States (Food and Research Action Center, 2015). As a county we need education and outlets to lead healthy active lifestyles to improve the health of the population. Typical physical education class isn't inspiring as many students as it could to continue to be healthy throughout their lives.

As a student I didn't enjoy my physical education class because it centered on team sports and competitiveness. Competitive play resonates will with some students. Unfortunately, this wasn't fun for me, and the goals were lost on me because I felt that I wasn't good enough to even play. I couldn't improve if nobody wanted to include me. I wasn't given the space to make mistakes and learn. I also didn't want to improve because the challenges that were set for the class appeared to me to be too far out of reach. As a result physical education class was a chore and a place I didn't want to be.

I then joined a rock climbing team where I was accepted for my ability. I was able to start where I was at, and move forward at my own speed. My rock climbing team was incredibly supportive of everyone, and the focus wasn't on the team doing well but instead individual growth. At competitions if you wanted to try a route you were forced to find someone on another team to belay you. The spirit of the sport was supportive enough that even other teams would help each other and cheer each other on. This non-competitive supportive community was born around a sport where teams were competing against each other. It was here that I realized that

outdoor sports or individual sports could offer something to students like myself. As a result I became very interested in outdoor recreation as a way to live a healthy and active lifestyle. Just last summer I hiked for 280 miles through Vermont's backcountry. I can directly relate this experience to when I joined a rock climbing team.

Non-traditional sports help introduce students to ways of living healthy and active lifestyles. Many EEC's provide outdoor recreation as a way to connect their students to the natural world, but it also serves a dual purpose of physical activity. Having fun in the woods not only encourages students to continue to do those activities but also share them with their families to get more people having fun outdoors.

I have worked at a few EEC's and a theme I noticed at every one was they were striving to make their program relevant to schools. Many would be asked to teach specific subject matter or meet certain state education standards while they were staying at the center. This way the program wouldn't have to solely rely on its intrinsic worth for a school to come. There was more incentive for a school when the program fits with what a teacher was already working on in class or if the program met hard to reach standards. All the EEC's that I have worked for have focused their programs on environmental science but they have also met physical education standards in their teaching methods. An EEC that is trying to make a program relevant to a school should be highlighting where and what specific standards they are meeting.

While doing my preliminary research for this project I looked for articles connecting EEC's to physical education. I was surprised to find very little. The opportunity is available for EEC's to meet physical education, however there isn't currently much research exploring the intersection of these two disciplines, which makes this research all the more relevant.

Research limitations and assumptions:

Limitation 1: Environmental education centers have developed field science curriculum that meet some current physical educational standards.

Limitation 2 Education curriculum is being used by the center that meets academic standards for field science and physical education.

Limitation 3: Environmental education centers approached will approve of this research project and will see value in this type of research.

Definitions:

1. Environmental Education Center (EEC)- Place in which school groups come for enrichment in the natural world.
2. Educational Curriculum- a plan or guide that an environmental education center uses to create educational programs.
3. Experiential Education- Learning through direct experience with a subject.
4. Field Science- Science which can be taught or scientific measurements that are able to be taken outside in the field
5. Physical education standards- national physical education standards (SHAPE America , 2013).
6. Non-formal education – Education that takes place outside of a school setting.

CHAPTER 2: LITERATURE REVIEW

This chapter reviews literature from various sources focused on the importance of physical education, experiential education and how they can be linked to create an immersing interdisciplinary approach to learning. Literature that addresses the (1) importance of physical education today, (2) current physical education standards and practices, (3) movement and its effect on learning, (4) success of experiential learning, and the (5) importance of place based education.

Importance of Physical Education Today

In the United States obesity and health problems associated with inactive lifestyles have become a significant health problems within our culture. People are less and less physically active. Technology and fast food have replaced active lives and healthy eating. Obesity has been linked to several health problems. Active lifestyles have also been linked to many health benefits. "Regular physical activity is associated with a reduced risk of… coronary heart disease, stroke, hypertension, type 2 diabetes, metabolic syndrome, colon cancer, breast cancer and depression… physical activity also has a positive effect on sleep patterns and bone density" (Galson, 2009, p. 772). Physical education helps students learn to value active lifestyles. By teaching youth these lifelong skills the United States can build a healthier population.

Many students need physical education to help them concentrate better throughout the day. Without movement during the day students have been found to be more distracted in the classroom (Hruska, 2008). By allowing students to engage in something

physical helps them to be motivated learners outside of physical education class. Some students not only need physical education to be productive in the classroom, but it's how they learn best. Kinesthetic learners do best when they are physically interacting with material. These learners are often difficult to engage in a lecture style classroom, but benefit greatly from being about to learn through activity.

Current Physical Education Standards and Practices

Current physical education in the United States has five national standards, each focusing on health and wellness of participants (SHAPE America , 2013). Each standard has suggested material and activities to meet them. Often the suggested activities are competitive team sports. However, this doesn't mean that physical education revolves around the usual school sports such as soccer, basketball and football. Sports are only a suggested activity to meet standards. Many other non-traditional activities could still meet the same standards. For example the standard "The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance" (SHAPE America , 2013). Could be met by teaching students how to play basketball by practicing dribbling and shooting a ball and demonstrating that in a game scenario; or a student could learn different canoe paddle strokes and demonstrating those skills canoeing on a lake.

Traditional physical education classes have taught skills by breaking down an activity into smaller pieces and practice. This requires little critical thinking and very low thought process (McBride, 2004). There is literature to support critical thinking skills

being developed in physical education classes (McBride, 2004). If a teacher is supportive in fostering a curriculum that is geared toward critical thinking skills, the use of movement within the class can prove to be an asset.

A recent problem that has been facing physical educations effectiveness in public schools is the lack of financial support from the school system. Where there are no physical education teachers, classroom teachers are forced to teach the physical education standards. This has proved to be difficult for many teachers because they feel that they don't have the proper training and skills to effectively teach physical education (DeCroby, 2005). As a result physical education isn't being taught to its full potential. Our society doesn't value physical education and as a result, it's not funded in schools. This lack of value has been reflected in our society.

Movement and its effect on learning

Movement has proven to improve long term memory storage (Sousa, 2011). The more synapses and connections the brain can make to a memory, the more likely that memory is going to be stored for the long term (Stevens- Smith, 2013). Interaction with material through movement gives a student another way to learn material, and another chance to make more synapses and connections in their brain related to the information. Spatial and kinesthetic learners find physically interacting with material to be the easiest way to learn. Movement also aids in brain function by moving more oxygenated blood to brain tissue. This can improve brain function up to 15%. (Sousa, 2011). Having more

time for movement in the classroom has been shown to keep students attention longer during instructional sitting time (Hruska, 2008).

Success of experiential learning

Learning through experience has been proven to be effective (Millenbah, 2003). College courses focused on wildlife taught at the University of Missouri- Columbia and Michigan State University have field courses which primarily use experiential education as a teaching method. Students gave very good evaluations for these types of courses stating that they will be using the knowledge they learned into the future. By connecting students to practical applications of knowledge, and giving them an activity students have a greater personal investment in their education (Millenbah, 2003). Experiential education has also proven effective in other cultures. Using play as a base of learning with trial and error Inuit have taught their young how to hunt from a kayak (Walls, 2012).

Importance of Place Based Education

Learning through immersion at an EEC can be very powerful to students. Place based education gives students concrete examples of natural systems. The interdisciplinary approach also connects the student to their natural world and to the subject matter being taught (Elder, 1998). This type of approach gives students an opportunity to learn implicitly (Frensch, et al, 2013). Using an EEC as part of a place based interdisciplinary education curriculum this allows students greater opportunity to learn implicitly.

The intersection of experiential learning, physical education and place based learning can reach more learning styles than typical class based lecture style education. Students from California State University, Monterey Bay went on a two week long interdisciplinary field trip. Students explored and learned about the history, botany and ecology of the Missouri River (Brooks & Gordon, 2011). By learning through this kind of immersion students were able to ask more in depth questions, and gain more profound insights about the topics they learned. The more a person interacts with information the more likely they are going to store that information in long term memory. By canoeing and camping along the Missouri River students were more likely to remember the things that they learned during the course.

Summary

Physical education is extremely important for the health of the population of the United States. With a population becoming increasingly inactive and suffering from obesity as a result, physical education is way the United States can foster a healthier present and future.

Physical education has the potential to play a key role in all subjects. At the moment it is marginalized, but it can be used to help foster critical thinking skills. Adding movement to a classroom, regardless of age will improve brain function and memory retention, strengthening the importance of the information taught. Experiential education can be successful. Students who are take part in experiential education also are more apt to use that knowledge in the future. Combining physical education, experiential education and place based education can lead to an

interdisciplinary immersion like program. EECs with residential programs are teaching students using these methods.

CHAPTER 3: METHODOLOGY

Research Methodology

This project uses qualitative research methods to collect the data to find links between EECs and national physical education standards. Questions for these interviews align with physical education standards and ways that EECs are meeting their current missions through curriculum. EECs were chosen based on the following criteria:

- If the EEC worked with school groups
- If the EEC had an outdoor education program
- If the EEC is a residential facility

After review of websites to verify that the EECs met the criteria the education directors were contacted to determine interest in participating in the study. If the EEC didn't have an educational coordinator the executive director was then asked to interview.

Interview data was analyzed and synthesized to determine how EECs were meeting physical education standards. Categories and themes were found based on the data to determine how and if the EECs were meeting physical education standards. This

data also produced a best practices guide written for EECs to help better meet physical education standards.

Data

This data was be collected by reviewing EECs. Choosing EECs that met criteria required reviewing their websites for the programming type they were delivering to audiences. Once it was determined that the EEC met criteria to take place in the study the director of education would be contacted to interview. If there was no director of education the executive director would be asked to interview.

Interviews lasted approximately twenty minutes each and consisted of questions related to physical education standards. Interviews also contained a question regarding how EECs meet their mission. This was important to the data to see if outdoor recreation was an integral part in the programming, mission and vision of the company. Interviews were coded and analyzed to find categories and themes. From this data I'm able to determine if and how the EECs are meeting physical education standards. I also looked at ways in which EECs are using outdoor recreation as part of their curriculum.

Information from this research will be used to create a best practices guide for meeting physical education standards at EECs. This document will be distributed to all who were interviewed and other interested parties. An EEC could use this information to help make their program more relevant to visiting schools. If an EEC can overtly prove that it provides physical education to visiting school this will hopefully give more incentive for schools to choose their program.

Sources of Data

Educational directors and executive directors were essential to this study. Data collection was entirely based on their interviews. The EECs were selected first based on the base line criteria in order to participate in the study. Next EECs were chosen based on randomly searched facilities across the United States. Staff websites and other contact lists were used to determine who was best to speak to in the company. Often the people selected were either educational directors or executive directors. If their title suggested something different they still had intimate knowledge of the programs provided. The following EECs contributed to the data collection of this project:

- Shavers Creek. Pettersburg, PA
- Eagle Bluff. Lanesboro, MN
- Wolf Ridge. Finland, MN
- Treehaven. Tomahawk, WI
- Trees for Tomorrow. Eagle River, WI
- The Ecology School. Saco, ME
- Islandwood. Bainbridge Island, WA

Treatment of Sub-Problems

Sub-Problem 1

The first sub-problem is to find EECs that meet the criteria for this research. A preliminary internet search of potential participants revealed that there are many EECs

that met criteria. Each EEC created its programs to best fit the needs of the audiences it served. Most EECs serve audiences in a relatively localized area. For example, a school in Madison, WI is more likely to use an EEC within a few hours than it is to visit an EEC in Ashville, NC. Because of this localized interest in EECs I choose locations which were across the country. I also chose EECs from different areas of the United States because physical education standards are national.

Websites and other promotional material were researched and reviewed to determine if the EEC did meet the criteria. Curriculum guides, lessons, and blogs were also used to assess if an EEC was eligible. Once it was determined that EECs met the criteria for participation in this study individuals within the companies were identified for interview. Many of the interview candidates were education directors or executive directors.

Sub-Problem 2

Prior research was necessary to determine current national physical fitness standards. From these standards an interview was created in order to determine if EECs were meeting the standards or not. Each standard was addressed with one question, the interview was a total of six questions. The proposed interview and guide was approved by UW-Stevens Point IRB committee to assure academic ethics were upheld.

Candidates for interview determined in sub-problem 1 were then contacted. Each candidate was given an interview packet explaining the nature of the research. As

interviews were conducted either by phone or in person they were recorded to assure quality. Each interview was then transcribed.

From the transcribed interviews data was then collected and analyzed in order to gain meaning from the interviews. Categories and themes were developed from the analyzed interviews.

Sub-Problem 3

From analyzed interviews responses will determine how the EECs are meeting physical education standards. Interview were also analyzed to better understand how the organizations meet their missions. This was important as it proved that outdoor education was important to the experience of the audiences the EEC served. The data was then analyzed to determine how and if it met each physical education standard. Categories and themes were developed from the research about general health and wellbeing provided by the EECs.

Sub-Problem 4

From information determined in sub-problem 3 a manual for best practices approach will be developed. This manual will use methods and techniques of those interviewed to help benefit others in the profession of environmental education. The purpose is to develop a deeper awareness of what EECs can offer their school audiences. This manual will also detail physical education not fully met by the EECs curriculum. I

also have determined ways in which EECs could also meet physical education standards they haven't identified in their interviews.

This manual will then be distributed first to interview respondents and other interested parties.

CHAPTER 4: RESULTS

Results of Sub-Problems

Sub-Problem 1

The first sub-problem was to find EECs that meet criteria for participation in this study. The criteria was the organization had to have as major components of education programming:

- Residential facility and overnight programming
- Field science curriculum
- Educational audiences included schools participating in the residential programming and field science

The results of this sub-problem came mostly from internet sources and recommendations of professionals working in EECs. Websites programming options ranged widely. Both programming and audiences were vastly different from one another. EECs overall offer a large breadth of information and experiences the public. The following describes how the EECs chosen met the criteria for participation.

- Shavers Creek. Pettersburg, PA
    - ✓ Residential and overnight programing

Shavers Creek provides four day residential programs for schools.

- ✓ Field Science Curriculum

  Exploration of the natural world is a main part of their programming.

- ✓ EEC uses field science and residential overnight programming with school groups

  Shavers Creek's Outdoor School primary purpose is to provide schools with residential programming.

"Shaver's Creek's Outdoor School is a four-day, residential program for school groups that provides upper-elementary school students from Centre, Huntingdon, Mifflin, and surrounding counties with a positive outdoor education experience. For more than 50 years, Outdoor School has provided exceptional environmental education programs to students through hands-on lessons and guided exploration of the natural world, with a curriculum that supports the Pennsylvania education standards for Environment & Ecology" (Penn State, 2012).

- Wolf Ridge. Finland, MN
  - Residential overnight programming

    Wolf Ridge houses its students in two dorms.

  - Field Science curriculum

    Wolf Ridge has a full list of classes it provides on its website.

  - EEC uses field science curriculum and overnight programming with schools

    "Activities and classes at Wolf Ridge are nearly all outdoors, typically three hours in length. Over fifty different classes and activities are available. Class

subjects include environmental science, cultural history, contemporary environmental issues, personal growth, team building and outdoor recreation" (Wolf Ridge Environmental Learning Center, 2015).

- Treehaven. Tomahawk, WI
    - Residential facility and overnight programming

      Treehaven has a residential facility for conferences and educational programming.
    - Field science curriculum

      Education is a key component of the programming at Treehaven.
    - Educational audiences included schools participating in the residential programming and field science

      While the programming provided is primarily for conferences, professional development and events they do offer school programs.

      Treehaven's mission is "Treehaven is the Wisconsin center for integrating natural resources education, management, research and recreation" (University of Wisconsin- Stevens Point, 2015).
- Trees for Tomorrow. Eagle River, WI
    - Residential facility and overnight programming

      Offers two to four day overnight programming for audiences.
    - Field science curriculum

      Offers field science classes for audiences which focus around sustainable forestry.

- Educational audiences included schools participating in the residential programming and field science

  Schools come from Wisconsin, Illinois, and Michigan to visit the center and do field sciences.

  "Our professional teaching staff is expert at using field studies and hands-on activities to awaken student awareness of the land's capabilities and limitations, and to inspire student enthusiasm for sustainable forest stewardship" (Trees For Tomorrow, 2012).

- The Ecology School. Saco, ME
  - Residential facility and overnight programming

    EEC provides two to four day overnight programing.
  - Field science curriculum

    Curriculum is based around coastal studies and upland locations in southern Maine.
  - Educational audiences included schools participating in the residential programming and field science

    EEC primarily does overnight programming for school groups.

    "In our residential programs, school groups have meaningful, cumulative learning experiences immersed in the ecosystems they learn about. We offer overnight and multi-day programs that allow students to fully experience science" (The Ecology School, 2012).
- IslandWood. Bainbridge Island, WA

- Residential facility and overnight programming

  EEC facilitates a four day three night educational program.
- Field science curriculum

  Uses the environment to teach students and inspire them.
- Educational audiences included schools participating in the residential programming and field science

  There is a program set up for schools to visit overnight.

  "IslandWood's four-day three night School Overnight Program immerses students and teachers in a naturally diverse 255-acre outdoor campus located on Bainbridge Island… Our curriculum, faculty, and staff support schools and teachers to raise achievement levels for all students by using the environment as a catalyst for learning" (IslandWood, 2015).

Sub-Problem 2

The National Association for Sport and Physical Education (NASPE) outlined five main physical fitness standards for public schools.

Standard 1 - The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.

Standard 2 - The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

Standard 3 - The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

Standard 4 - The physically literate individual exhibits responsible personal and social behavior that respects self and others.

Standard 5 - The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

(SHAPE America , 2013)

From these standards interview questions were developed. Questions focused around describing the types of programming that each EEC provides and how they are meeting their mission. These questions were essential to determine if the EEC was using outdoor recreation to meet their vision, mission and goals. Questions are listed below:

1) How do you meet your mission?
2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?
3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?
4) On a daily basis what physical activities do you offer your students?
5) What education do you have around healthy lifestyles and maintaining physical fitness?
6) How do you guide students to be more responsible and respectful of themselves and others?
7) How do you develop the values of physical activity and healthy lifestyles in students?
8) Is there anything else you would like to add?

Questions 1 and 2 focus around missions and types of physical activities provided to students. Questions 3-7 focus on how the EEC is meeting physical fitness standards. Question 8 provides the interviewee from the EEC to provide any additional information they find pertinent.

EECs were then contacted and a phone interview was scheduled. Each EEC was made aware of the nature of the research through an interview packet. Each interview packet contained:

- Cover letter explaining the research
- Physical Fitness Standards
- Interview Questions
- Informed Consent Form

Before each interview the representative of the EEC would sign it and send it back. All interviews were done by phone and recorded to maintain quality. From the recording each interview was transcribed. Interviews were then numbered. These interviews can be located in the appendix.

Qualitative analysis was used to analyze the interviews. Propositions were created based on information gathered during the interview (see appendix). From the propositions categories became clear and themes from there.

Categories

1. Activities that are done outside with students.
2. Developing skill capacity in outdoor activities.
3. Techniques EECs use to educate people.
4. Types of programming provided outside of outdoor recreation classes.

5. Types of programming provided by EECs which addresses emotional and physical wellbeing including health eating habits.
6. Community building through soft skill development.
7. Promoting environmental stewardship in EECs programming.
8. Activity or action isn't addressed in program directly.
9. How internal staff and other organization members support activities.

Themes

1) EECs provide opportunities for their students to be physically active through outdoor recreation, professional staffs positive and motivating attitude encourages students to continue to try these activities.

    Categories related:

    Activities that are done outside with students

    Skill capacity in outdoor skills

    Techniques EECs use to educate people

    How internal staff promote outdoor activities

2) EECs provide programming which teaches students about respect, community and stewardship both of the human world and the natural world.

    Categories related:

    Types of programming provided outside of outdoor recreation classes

    Programming provided which addresses physical and emotional well being

    Community building through soft skill development

Promoting environmental stewardship through programming

Sub-problem 3

After analyzing interviews with EEC staff I identified links where EECs were or weren't meeting physical education standards. Many of the standards are being met on site, however some of the standards are being met overtly. The underlying tone or culture of the organization meets the standard, but it isn't made explicit to the students visiting. Other standards are made plain to students. Below I have analyzed each standard independently.

> Standard 1 - The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.

EECs provide numerous opportunities for variety of motor skills. If during the course of a program an EEC provides 2 or more kinds of outdoor recreation it has achieved this standard. All EECs interviewed do achieve this standard. The most popular outdoor recreation activity is hiking. Besides hiking EECs interviewed offer a variety of outdoor recreation activities appropriate for climate. Cross country skiing, snowshoeing, mountain biking, and canoeing were some of the stated activities. Even a non-tradition outdoor recreational activity such as gardening could meet this standard. Gardening can involve raking, weeding, using a wheel barrow or tiller these are all motor skills and movement patterns. Giving a general overview of outdoor recreation activities is important to encouraging students to continue to want to be outside and gain enjoyment from nature. "It's amazing and we work to promote that accessibility of the skills

to say hey this is something that you can do on your own" (Walz, 2014). A full list of activities can be found in the data.

Standard 2 - The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

There are certain activities which require more instruction than others and offer the opportunity to build upon skills previously learned. Canoeing for instance is an outdoor recreation activity that allows students to learn basic knowledge and build off that over time. EECs that offer courses focused around one outdoor recreation activity meet this standard. Any time an EEC offers the same activity twice and instructs students on moving beyond basic knowledge meets this standard. "We will teach cross country skiing to [students] and they will have another opportunity… to go out again. They learned some skills and they want to do it again" (Hueskinveld, 2014). Offering the skill more than once is key to achieving this goal. While some EECs didn't meet this standards it is possible to achieve through more intensive exploration of one outdoor recreation activity. Devoting time to teaching the skill is important. This standard goes beyond outdoor recreation as simply a mode of transportation.

Standard 3 - The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

Promoting health enhancing level of physical fitness through outdoor recreation can begin at an EEC. Many EECs through programming introduce students to outdoor recreation activities but rarely have the chance to follow through with long term physical fitness education. By making

the activities feel enjoyable and achievable the hope is that the students will want to continue to do those activities. Staff at the EECs provide role models for people who live healthy physically active lives. Some EECs have education surrounding healthy eating habits. “We talk about stats too we talk about people nutrition too we talk about fruits and vegetables and eating healthy and make sure you’re exercising and then we compare that to the other living things” (Sturgis, 2014). Healthy eating habits is only a part of a healthy lifestyle. Many EECs stated that this wasn’t an overt part of the program but rather an underlying theme of the students stay. The EECs interviewed aren’t meeting this physical education standard.

> Standard 4 - The physically literate individual exhibits responsible personal and social behavior that respects self and others.

Many of the EECs interviewed do achieve this standard through respect of self, others and property. “Respect is one of our four rules at IslandWood with the students we go in depth over the course of the week” (Allen, 2015). Other EECs have many team building activities and initiatives that encourage students to be respectful and responsible while part of a team. IslandWoods program goes a step further and introduces to students to the concept of cultural stewardship and community building as tools for living lighter on the earth. Stewardship, as explained by IslandWood, is about being respectful and responsible citizens to each other and the environment (Allen, 2015). Other EECs have team building weekends for higher education classes and professional development. Spending time doing team building challenges, understanding how they work and learning to implement them is an important skill to fostering a high functioning community.

Standard 5 - The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

"In our mission we strive to create environmental education program which incorporate those themes and in particular in related to physical education I try to introduce things that are fun and physical and outdoors as a vehicle to do some of that environmental education" (Hueskinveld, 2014). Treehaven, and other EECs introduce students to a variety of modes of transport in the outdoors. By introducing students to these activities and having fun with their friends while doing it encourages them to do it again. The way in which EECs are teaching students outdoor recreation meets this standard. Staffs attitude toward the activity they are teaching directly affects the enjoyment of the students. If staff have an enthusiastic, energetic attitude about the subject matter this models enjoyment of physical activity. Staff sharing stories of learning the subject matter, and encouraging students through challenge not only helps to meet this standard but also aids in teaching students perseverance. This standard heavily relies on program teaching technique. EECs can and do meet this goal through a combination of outdoor recreation, team building and community stewardship.

Sub-Problem 4

Sub-Problem 3 was the basis for the Best Practices Manual. Relating the information of where other EECs were meeting physical education standards was important. Also giving examples of how other EECs were meeting these standards could broaden programming at another site. A full list of activities that were provided by the EECs was added as an appendix to the document. EECs participating in the study received copies of the Best Practices Manual.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Conclusions of Data Analysis

Through my research two major themes emerged from my qualitative data. These were derived from propositions and categories. Through the interviews and speaking with EECs about their outdoor recreation opportunities I was able to determine while physical education wasn't the focus of their programming; EECs were providing valuable knowledge and skills to encourage students to continue to live healthy active lives when they returned home. The breadth of outdoor recreation activities presented would speak to students of a wide variety of interests. Outdoor recreation is infused into programming when often the goal isn't outdoor recreation at all but instead to either connect students to nature or connect to each other.

Theme 1

EECs provide opportunities for their students to be physically active through outdoor recreation; professional staffs' positive and motivating attitude encourages students to continue to try these activities.

The number of activities that EECs provide is extensive. Staff members' enthusiasm for this encourages students to more fully engage in the activity. Making activities fun is also a proven method to get students to want to do them again. When learning, if the brain can connect information to an emotion the information learned has greater chance of being stored in long term memory. If that emotion is positive this gives the brain incentive to want to do it again, however if that emotion is negative when the opportunity arises to do the same activity the brain won't want to repeat the activity (Sousa, 2011). By EECs making the outdoor recreation

activities fun this is setting up students brains to want to repeat the activities. Lifelong physical enjoyment of physical activity is a standard of Physical Education in public schools.

Collectively the EECs interviewed have provided an extensive list of possible outdoor recreation or physical activities to provide to their students. Each EEC had its additions to this list. These activities were provided to compliment field science curriculum, not necessarily to meet National Physical Education standards. Many EECs hoped that their students would continue to do these activities either by themselves or with others in the future as a way to enjoy natural areas, potentially even return to the EECs campus for another trip.

Theme 2

EECs provide programming which teaches students about respect, community and stewardship both of the human and natural world.

A recurring statement made by EECs was their dedication to not only connecting people to each other but also connecting people to nature. This simultaneous connection can be defined as community building and stewardship. Respect was popular vein that ran through each EECs curriculum. Respect could look like class and behavior management or respect of nature and place. All EECs were putting respect for both other people and nature as a main part of their programming. This directly aligns to the physical education standard 4 "the physically literate individual exhibits responsible personal and social behavior that respects self and others" (SHAPE America , 2013). Respect is often is a curriculum theme during a students' stay at an EEC. Learning to treat themselves and others respectfully is a goal of programing.

The only category that didn't connect with a theme was the category of 'activity or information isn't addressed in programming". This category has only a couple of propositions in

it, but even so it is still equally important. Because each interview question aligned with a standard this data is telling of which national physical education standards aren't being met by EECs. Together the EECs interviewed indicated they're meeting all but standard 3 "the physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness" (SHAPE America , 2013). Because EECs don't go into depth about how to maintain a healthy and active lifestyles this goal isn't being met. There's potential to include this standard in the curriculum using the outdoor recreation activities which an EEC offers. Individually based on differing programing not all EECs are meeting the remaining four standards. However, collectively the EECs interviewed are meeting them.

How Curriculum Meets Physical Education Standards

The EECs who were interviewed indicated a long list of physical activities they provided for their students. While it was identified through interviews that they met standards in a broad sense, each EEC might find they meet different standards with different groups based on the needs of that group. From the information I analyzed I found that I could determine on the whole if collectively EECs has the potential to meet the physical education standards. Many of the physical education standard education comes down to teaching technique, and if a centers educators are inconsistent some classes might meet standards while other don't.

Standard 1 - The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.

By offering many different outdoor recreation opportunities EECs have the potential to meet this standard with each group that participates in programming. Offering two or more physical activities per program will meet this standard. All EECs interviewed provide a wide variety of outdoor recreation classes and activities.

Standard 2 - The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

Any activity an EEC provides which builds skills off itself will provide this. Many EECs indicated they do provide these kinds of activities. Canoeing and rock climbing were mentioned as meeting this standard. This standard is only met if the student is able to practice skills and get better. An educator also should help guide their students to better understand how movement strategies affect performance of a skill.

Standard 3 - The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

Based on my research EECs aren't offering programming which meets this standard. Physical health based on fitness and activity aren't overt pieces of curriculum provided. There is potential to broaden the students' knowledge of outdoor recreation with these skills. Ways in which this could be incorporated would be to talk with students about how many calories they are burning during the day or how many hours a week of physical activity is recommended to achieve health benefits. Some EECs do talk about physical well-being in relation to food. Educating students to make healthy food choices, and feeding students healthy meals are some ways that EECs do help students gain knowledge of how to live a healthy lifestyle.

Standard 4 - The physically literate individual exhibits responsible personal and social behavior that respects self and others.

EECs all achieve this standard with some variation. Overtly teaching students the concept of respect helps the EEC to foster a positive experience for all students. Respect is also a topic associated with buildings and natural areas. Respect of space is key for an EEC who is bringing students into public natural areas or property that they themselves own; or to maintain a positive working relationship with property owners of land they use.

Standard 5 - The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

This standard is met by programming centered on outdoor recreation as a way of appreciating and connecting to both other people and nature. Connection to nature and each other were brought up multiple times over several interviews. Team building challenges and games centered on social interaction are very important ways that EECs meet this standard. EECs that have a fun, dedicated and engaging staff of educators hone in on this standard as a platform for learning.

Benefits of offering Outdoor Recreation

From the array of activities EECs are providing they are introducing people to life- long engagement in these sports. Obesity in America has become more prevalent due to lack of exercise and healthy eating habits. Many people either don't have enough time to be active or don't have the motivation to be active. Some people start a fitness plan and quit shortly after because they get bored. Keeping a fitness program fun and changing activities can keep a person motivated to continue to exercise (Mayo Clinic, 2013). EECs indicated that a way in which they

engage students in the outdoor is by making outdoor recreation fun. This aligns with brain-based learning principles as well (Sousa, 2011). By making an activity or subject fun the brain will not only be more likely to store the information learned in the long term memory but also the brain will create a pathway for the individual to want to do that activity again.

The CDC recommends that adults be active 2.5-5 hours per week to receive health benefits. 2.5 hours is the minimum number of hours to receive basic health benefits, a person who is active 5 or more hours per week will receive more health benefits. A child or adolescent however should receive at least one hour of activity per day to receive health benefits (Center for Disease Control and Prevention , 2014). Health benefits vary from decreased stress levels of participants to bone and muscle health. Based on the number of activities offered by an outdoor classroom EECs are meeting this recommendation for visiting students.

An added benefit is an EEC is providing enough opportunity for their staff to be physically active. Teaching staff are generally out in the field with students for the same amount of time. If teaching staff are active along with students an EEC is ensuring that their staff are maintaining a health enhancing level of physical fitness. Added benefits aside from physical health are reduced stress and incidents of depression. Employers who develop a culture of activity also find that employees are more productive during their inactive work time (Center for Disease Control and Prevention , 2014).

Recommendations for EECs

Meeting physical education standards wasn't stated as a main focus among the EECs interviewed. However, outdoor recreation was stated as a main tool for not only transportation but also as a way to connect to nature. Based on the number of outdoor recreation opportunities

provided by EECs, this part of programming is incredibly important to the environmental education profession. Getting students outside and having fun in nature can manifest itself in a variety of ways, being active outdoors is only one way to foster that.

Even if a visiting school doesn't abide by physical education standards, or the audience isn't school based there are still great benefits for keeping these pieces in programming. Being physically active not only helps people learn and connect with a subject but it also gives that person more incentive to live a healthy active life. The more kinds of physical activity a person has contact with the more likely they will find something they enjoy doing, not only for the health benefits but the emotional benefits.

By exposing more people to ways of exploring nature, more people will connect with nature. With more people staying inside instead of using outdoor spaces our culture is coasting into an epidemic of nature- deficit disorder (Louv, 2008). Having such a wide variety of outdoor recreation opportunities at EECs this helps people connect to nature and not only appreciate it but gain the benefits that being outdoors has to offer. The more people appreciate the connection with nature, the more likely they are to support continuing activities like this.

Recommendations for Future Research

My research problem could have been answered using a variety of data collection techniques. Interviewing executive and education directors was a good start to looking at how EECs are meeting physical education standards. Unfortunately many of the people I interviewed don't teach on a daily basis with their organizations, instead they employ a team of educators. The data could be different by interviewing the educators at the sites. What is actually happening compared to what people think happens can be vastly different.

Often those I was interviewing commented that they had little knowledge of physical education standards and were unsure how to meet them. Many stated interest in meeting physical education standards and finding ways to add them to their curriculum. This lack of information might have skewed my results. Even though I sent a copy of the standards to each interviewee, it was an assumption of mine that they read and understood what the standards meant. Another approach would be to use case studies to help to minimize this lack of understanding. By interviewing in depth people from the same organization and documenting activities that were taking place I could have more easily determined if physical education standards were being met.

Another piece of interesting data would be how much time is spent active during the day for students. Is this meeting the recommended one hour a day for children or five hours a week of physical activity (Center for Disease Control and Prevention , 2014)? Being outside and being active don't always go hand in hand. Students closely examining a tree might not be moving around too much, but students who are kayaking to a study site would be active. Using pedometers or heart monitors throughout a multiday experience would be interesting knowledge.

Interviewing visiting schools to find out what their expectations are of the physical activity level their students participate in could lead to some interesting marketing information for an EEC. Asking visiting teachers how important it would be to meet state or national physical education standards while on trip could help aid in this information.

Conclusions of Study

While many of the standards are being met, not all are. By meeting these standards the EEC can advertise this as a benefit of participating in their program. Schools having problems meeting physical education due to funding cuts might also find EECs programming as a less

expensive alternative to a full physical education program. Even though all the standards are currently not being met, doesn't mean there isn't potential for an EEC to meet each one. Many EECs wouldn't have to change any programming as they are already meeting some standards within their current curriculum.

Even for non-school audiences the amount of outdoor recreation learning opportunities provided by EECs is extensive. Physical activity can benefit everyone, and increased physical activity choices increases likelihood of people living lifestyles that are active. While there are several reasons why Americans don't get enough physical activity in their day to lives, EECs are a place that takes time to be active. EECs are helping to build a healthy population of people through their programming.

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APPENDICIES

Appendix A: Data

Figure 1: Comprehensive list of activities indicated by EECs and their potential to meet current physical education standards.

Activity	Standard 1	Standard 2	Standard 3	Standard 4	Standard 5
Hiking	X		x		x
Games	X		x	x	
Kayaking	X	x	x		x
Canoeing	X	x	x		x
Mountain Biking	X	x	x		x
Caving	X	x	x		x
Rock Climbing	X	x	x	x	x
Ropes Course	X	x		x	x
Snowshoeing	X		x		x
Cross Country Skiing	X	x	x		x
Orienteering	X	x	x		x
Geocaching	X	x	x		x
Bouldering	X	x	x		x
Archery	X	x	x		x
Survival Skills		x		x	
Backpacking	X		x		x
Sailing	X		x		x
Dog Sledding	X	x	x	x	x
Camping				x	x
Tracking					x
Frisbee Golf	X	x	x		x
Sledding	X		x		x
Volleyball	X	x	x	x	x
Kickball	X	x	x	x	x
Fly Fishing	X	x	x		x
Swimming	X	x	x		x
Yoga	X	x	x		x
Dance	X	x	x	x	x
Gardening	X			x	x

Team Building	X				x

Propositions

Interview #1

1) Connect people to people
2) Connect people to the natural world
3) Children (under 18) participating in a program
4) Program for schools
5) Activity of exploration of the natural world
6) Learning about the natural world
7) Team building
8) Hiking
9) Playing games
10) Learning/ being outside
11) Summer programs
12) Kayaking
13) Canoeing
14) Mountain Biking
15) Caving
16) Rock Climbing
17) Physical Skills
18) Educational

19) Don’t provide opportunity (of thing)
20) Physical health and Wellbeing
21) Healthy food choices
22) Exercise
23) Encourage people to be outside
24) Respectful Behavior (standards of behavior/ codes of conduct)
25) Responsible behavior
26) Respectful of place/ environment
27) Outdoor Recreation in program
28) Unsure of effect of activity
29) Not using personal electronic devices

Interview #2

30) Educational Programming (excluding school groups)
31) Environmental Education Center
32) Natural History
33) Ecology
34) Science
35) Social Studies
36) Experiential Education
37) Environmental Stewardship
38) Soft Skills
39) Eating

40) Overnight program

41) Trust

42) Communication

43) Problem solving

44) Independence

45) Outreach Programs

46) Live Raptor Program

47) Planetarium

48) Feeling Safe outside

49) Positive Staff

50) Having Fun outdoors

51) Ropes Courses (both high and low)

52) Snowshoeing

53) Cross country skiing

54) Orienteering/ geocaching

55) Skills training

56) Moving beyond a beginner skill, increasing skill capacity

57) Bouldering

58) Doing the skill/ activity outside of program

59) Schools choose programming

60) Fitness Journal

61) Draw Conclusions

62) Sunset a program

63) Pedometers

64) Archery

65) Distraction

66) Classes

67) Environmentally Responsible Behavior

68) Community Building

Interview #3

69) Develop citizenry

70) Environmentally proactive skills

71) Motivation to continue to protect environment

72) Commitment

73) Work as a community to protect environment

74) Provide opportunities for students to return to continue learning

75) Social understanding

76) Model positive behavior in facility/ organization

77) Survival Skills

78) Scientific Field Investigation

79) Backpacking

80) Sailing

81) Dog sledding

82) Camping

83) Preparation for being outside

84) Night Investigation/ experience

85) Benefits of Being outside

86) Challenging students outdoors appropriate to skill set

87) Physical education credits

Interview #4

88) Tracking

89) Frisbee Golf

90) Sledding

91) Volleyball

92) Kickball

93) Fly Fishing

Interview #5

94) Inquiry Based Science Education

95) History of an activity

96) Swimming

97) Thinking positively

Interview #6

98) Food systems/ where food comes from

Interview #7

99) Place Based Education

100) Yoga

101) Dance

102) Gardening

Categories and Themes

Major Themes:

EECs provide opportunities for their students to be physically active through outdoor recreation, professional staffs positive and motivating attitude encourages students to continue to try these activities.

Categories related:

Activities that are done outside with students

Skill capacity in outdoor skills

Techniques EECs use to educate people

How internal staff promote outdoor activities

EECs provide programming which teaches students about respect, community and stewardship both of the human world and the natural world.

Categories related:

Types of programming provided outside of outdoor recreation classes

Programming provided which addresses physical and emotional well being

Community building through soft skill development

Promoting environmental stewardship through programming

1. Activities that are done outside with students.

   Exploration of natural world (5)

   Walking/ Hiking (8)

   Playing Games (9)

   Kayaking (12)

   Canoeing (13)

   Mountain/ Road Biking (14)

   Caving (15)

   Rock Climbing (16)

   Ropes Course (high and low) (51)

   Snowshoeing (52)

   Cross Country Skiing (53)

   Orienteering/ Geocaching (54)

   Bouldering (57)

   Archery (64)

   Survival Skills (77)

   Backpacking (79)

   Sailing (80)

   Dog Sledding (81)

Camping (82)

Tracking (88)

Frisbee Golf (89)

Sledding (91)

Volleyball (92)

Kickball (93)

Fly Fishing (94)

Swimming (96)

Yoga (100)

Dance (101)

Gardening (102)

2. Skill capacity in outdoor activities

   Moving beyond a beginning skill, increasing skill capacity (56)

   Skills training (55)

   Doing the skill/ activity outside of program (58)

   Preparation for being outside (83)

   Challenging students outdoors appropriate to skill set (86)

   History of an outdoor recreation activity (95)

3. Techniques EE centers use to educate people

Learning about the natural world (6)

Learning and being outside (10)

Educational programming (excluding school groups) (30)

Experiential education (36)

Schools choose programming (59)

Provide opportunities for students to return to continue learning (74)

Not using electronic devices (29)

Inquiry Based Science Education (94)

Place based education (99)

4. Types of programming provided outside of outdoor recreation classes.

   Program for schools (4)

   Summer programs (11)

   Educational (18)

   Outdoor recreation in program (27)

   Natural History (32)

   Ecology (33)

   Science (34)

   Social Studies (35)

   Outreach programs (45)

   Live raptor program (46)

Planetarium (47)

Environmentally proactive skills (70)

Scientific Field Investigation (78)

Night Investigation/ experience (84)

Children (under 18) participating in a program (3)

Overnight Programming (40)

5. Physical and emotional wellbeing, healthy lifestyles addressed. Healthy eating and lifestyles

   Physical health and wellbeing (20)

   Healthy food choices (21)

   Exercise (22)

   Eating (39)

   Fitness Journal (60)

   Pedometer (63)

   Physical Education Credits (87)

   Thinking Positively (97)

6. Community building through soft skill development.

Connect people to people (1)

Respectful Behavior (standards of behavior/ codes of conduct) (24)

Responsible Behavior (25)

Soft skills (38)

Team building (7)

Trust (41)

Communication (42)

Problem Solving (43)

Independence (44)

Community Building (68)

Develop Citizenry (69)

Work as a community to protect environment (73)

Social understanding (75)

7. Promoting environmental stewardship in EE centers.

Connect people to natural world (2)

Encourage people to be outside (23)

Respectful of place/ environment (26)

Environmental stewardship (37)

Feeling safe outside (48)

Having fun outdoors (50)

Environmentally responsible behavior (67)

Motivation to continue to protect the environment (71)

Commitment to environment (72)

Benefits of being outside (83)

Food systems/ where food comes from (98)

8. Activity or action isn't addressed in program directly – not related to a theme

   Don't provide opportunity (of thing) (19)

   Unsure of effect of activity (28)

9. How internal staff and other organization members support activities

   Environmental education center (34)

   Positive staff (49)

   Model positive behavior in facility/ organization (76)

Appendix B: Interview Packet

Cover Letter

Hello!

Thank you for agreeing to participate in research that will benefit Environmental Education Centers everywhere!

My name is Melissa Perry and I'm currently a graduate student at the University of Wisconsin-Stevens Point. I'm interested in this research because I feel that environmental education centers can provide and meet many academic standards. I'm earning my masters degree in residential environmental education. Part of my degree requirement is a research based project. I have chosen for my project to examine the ways that environmental education centers are meeting national physical education standards. I have found that environmental education centers do have movement based activities; movement has been proven to aid in learning and memory retention. As an end result I plan to make a best practices guide to incorporating national physical education standards into an environmental education centers curriculum. My primary research methodology is interviewing those who work in environmental education centers. This interview will take about 40-60 minutes of your time and will be recorded. The interview might be feasible to be conducted in person but most likely will be by phone or skype.

Included in this packet are:

- National physical education standards
- Interview Questions
- Informed consent form

If you have any questions regarding my research or the interview process please don't hesitate to ask. My contact information is listed below.

I look forward to hearing from you soon,

-Melissa Perry

Melissa.Perry@conserveschool.org

Informed Consent Form

Informed Consent Form

Informed Consent to participate in Human Subject Research

Melissa Perry, a graduate student at the University of Wisconsin- Stevens Point is conducting research to determine if and to what degree nature centers are meeting national physical education standards.

As part of this study, you will be asked to participate in one interview which will be approximately 30-50 minutes. This interview will be recorded by tape recorder or by Melissa. Participation in this interview poses no risk to you. You can decline to answer any questions which make you feel uncomfortable.

As a result of participating in this survey you will be contributing to the knowledge of environmental education standards. From this data I will be producing a best practices guide to linking national physical education standards with nature centers.

Any information in this interview will be transcribed and coded so that you and your organization will remain anonymous in data analysis, publications or presentations related to this study. Any recordings, transcripts, or notes will be kept on a password protected computer, and will be destroyed upon completion of this study.

Participation in this study is voluntary. You may withdraw from this study at any time. If you choose to do so, any data that has been collected from you will be destroyed.

When this study is complete, you may receive a copy of the study. If you have any questions, please contact:

Melissa Perry
5400 North Black Oak Lake Rd
Land O Lakes, WI 54540
(715) 547- 6364

If you have any complaints about your treatment as a participant in this study, please contact:

Dr. Jason R. Davis, Chair
Institutional Review Board for the Protection of Human Subjects
School of Business and Economics
University of Wisconsin-Stevens Point
Stevens Point, WI 54481
(715) 346-4598

Although Dr. Davis will ask your name, all complaints are kept in confidence.

I have received a complete explanation of the study and I agree to participate:

Name:

Date
(signature of subject)

National PE Standards

The National Content Standards publications define what a student should know and be able to do as result of a quality physical education program. States and local school districts across the country use the National Standards to develop or revise existing standards, frameworks and curricula.

Standard 1 - The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.

Standard 2 - The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

Standard 3 - The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

Standard 4 - The physically literate individual exhibits responsible personal and social behavior that respects self and others.

Standard 5 - The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

Interview guide for nature centers respondents

1) How do you meet your mission?
2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?
3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?
4) On a daily basis what physical activities do you offer your students?
5) What education do you have around healthy lifestyles and maintaining physical fitness?
6) How do you guide students to be more responsible and respectful of themselves and others?
7) How do you develop the values of physical activity and healthy lifestyles in students?
8) Is there anything else you would like to add?

Appendix C: Interviews

Shavers Creek- Kate Jordan 10am November 7th 2014

Interview #1

1) How do you meet your mission?

   Our mission is to connect people to people (1) and people that natural world (2)

   We do that in so many different ways one of the main things that we do to me is I am the school camp and summer camp program coordinator and so I have children come out (3) here during the school program season and(4) they explore (5) the area and they learn about different animals (6) here in Pennsylvania and they learn about the plants (6) and

so we're hoping that'll help them make some connections that they might not have made before (2). We have things like outdoor school where they come out there where they are connecting to the place (2) and each other it creates an environment where they're interacting with one another (1). And interacting with adults that they can trust (1) and that sort of thing so they create that sort of environment and then things like team building (7) I don't know how much detail you want me to go in to but we do our teambuilding program (7) and our Penn state classes and with all those things we try to keep our mission in mind where we connect people to nature to the natural world to places in central Pennsylvania here (2) and to each other as well. (1)

2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?

   For my program area it's a lot of hiking (8) and games (9). So the hiking pieces we teach when we're out on the trail so for 3 or 4 hours depending on the program (8). They can be out on the trails (10) discovering and learning (5, 6) with that comes different games that we play (9) different versions of tag for example. Other games where they do difference classification kind (9) of like red rover but with animal themes plant themes (6). And other programs like our summer camps (11) we do have kayaking (12) and canoeing (13) hiking (8) rock climbing (16) mountain biking (14) caving (15). And for the summer camps that I direct (11) they are out on the trails all day long (10). Hiking (8) and playing (9) and all that fun stuff.

3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?

   I don't do a whole lot of teaching with the canoeing (13) and rock climbing (16) things like that, that's not really my area so I'm trying to think of examples in what I do. Most of mine are going to be more educational and mental (18) than they are physical skills (17) so I'm not really sure that I provide that kind of opportunity (19).

   You'll have to excuse me I'm taking notes as well- that's ok

4) On a daily basis what physical activities do you offer your students?

   So daily we do offer hiking (8) and games (9) so whenever they're here for my programs they have the opportunity to do those things those aren't every day of the year because we do have our seasons so those are kind of September October into November and then again March April and May (4). And then I guess too summer camp June July and August (11) but it's going to be different kids each time it's not going to be the same kids every program.

5) What education do you have around healthy lifestyles and maintaining physical fitness?

   We don't have a whole lot (19). Except that we do have is kind of incorporated into our program so when for example we teach about plants during one of our stations on our guided nature center visit (6) I ask the kids what do you need to be healthy and survive (20)? And we talk about stats too we talk about people nutrition too we talk about fruits

and vegetables and eating healthy (21) and make sure you're exercising (22) and then we compare that to the other living things so we compare that to what a bat needs to survive as to what a plant needs to survive (2). And then other than that just trying to encourage people to be outside (23). If they come visit the center what have you seen and why that's blooming this month and you should go check it out it's on this spot on the trail and things like that (2).

6) How do you guide students to be more responsible and respectful of themselves and others?

   This one is definitely something that we do here a lot because we're working to connect people to people (1) that kind of mission. And so we're always hitting the standards like at camp for example our standards are be respectful be safe (24) and have fun. And we really talk about that respectful piece being nice to one another, taking care of one another (24). And we reiterate that every day and then that's something that we can go back to if we have any issues or anything like that. And for responsibility you know we encourage kids if your friend is tired help them get them a drink of water pick up different tasks for each other (25) and then also being respectful of place (26). Being on trail not taking animals and plants out of their homes and I bring it back (26) to them would you want someone to come into your home and take your things well no so we don't want to do that to our animal and plant friends either (2).

   And do any of your games go into responsible and respectful of others?

Not specifically that I can think of. I mean we do encourage them to be respectful while their playing of each other (25)

7) How do you develop the values of physical activity and healthy lifestyles in students?

   This one here we don't see them every day so we can't really see that (28). But I guess the best example is like outdoor sports when they are here for a week or they're with us for most of a week (27) and we're outside the entire time (10). Moving the entire time (22). And even if it's raining or you know snowing or whatever we try to be outside as much as possible (10). So just by example I guess and showing them that how easy it is to be outside and how fun it is (23).

8) Is there anything else you would like to add?

   I can't think of anything that's glaring. Other than we do try to encourage kids to be outside as much as possible (23) and put away their electronic devices and all that kind of stuff (29). And honestly I think that's one of the big draws of our summer camp is that it's pretty much traditionally like a summer camp (11) it's like it was in the past where you're outside but they don't do canoeing (13) and kayaking (12) and stuff because their younger kids (3) they do that when they're older but it's still just encouraging them to be outside as much as possible. (23)

Interview #2

Transcribed

Eagle Bluff- Sara Sturgis 10/30/14 9am

1) How do you meet your mission?

   Well we meet our mission through educational programming (30) and in a couple of different veins the first being our residential environmental education center (31) which is curriculum written for middle school (4) but we break up and down for a little bit part of the middle school model (4) with overnight programs to the students in a couple of different tracts (4) they can take classes in outdoor recreation (27) team challenges (7) natural history (32) ecology (33) physical science (34) and social studies (35). So it really encompasses parts of our mission with experiential education (36) environmental education stewardship (37) for connecting people to the natural world (2) and also each other (1) and we're living and learning(10) and eating (39) and sleeping(40) and spending all this time together that it builds up more of those soft skills (38) like trust (41) and communication (42) problem solving (43) independence (44) so that's really the corner stone of our program and then we branch out of that with some outreach programs (45) related to team building (7) once again we have a live raptors program (46) we also have an inflatable planetarium (47) so it really encompasses the natural history (32), science (34) and hands on learning methodology (36). We have a summer camp program (11) that does the same thing but learning (10) takes a secondary focus and then the primary then is getting kids outdoors enjoying themselves (23) and feeling safe (48). And all that and then having really great charismatic staff (49) helps to facilitate those sorts of things. That's part of our mission is having quality staff (49) to be a gateway to a positive experience in the outdoors (50).

2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?

   Each one of our classes has sort of a hiking piece to it. It's not teaching hiking but every class goes out on trail and they may hiking (8) to a water quality study site. So we definitely take kids outdoors (10) to doing that on a very basic level. And then on top of that we actually have classes where we teach more outdoor activities or silent sports (27) sort of things. For instance rock climbing (16) we have a high ropes course we also have a low ropes course (51) we do canoeing (13) I think I mentioned rock climbing (16) already. We do snowshoeing (52) cross country skiing (53), orienteering both competitive and beginning orienteering we have a geocaching course (54).

   -Melissa- great it sounds like you have quite a few activities there.

   We have about 35-40 to pick from depending on the season to pick from.

3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?

   Canoeing isn't like a canoe tour (13). We go over dry land training with strokes and paddles (55). How to communicate to your partner (42). How to navigate the river, that sort of thing (55). And the first half of our section and of the river is a pretty great beginner and then it literally turns a corner and becomes more high level and they really have to apply those skills that we just taught them on the first half of the river. (56) In

hopes then that they are more prepared to go out on their own and feel comfortable in a canoe on a river (48). Is that kind of answering that?

-yea do you have any other activities which you have that progression?

Rock climbing (16) does that we start with bouldering (57) and going over equipment and going over some techniques and tricks and we demonstrate that and also have some kids practice those things (55) and then the last half of the class allowing them to put those to practice and they can choose their route choose their holds, things like that. So I would say rock climbing is very much like that (56). Our GPS course (54) is as well we do a lot of practice and getting used to the equipment then we send them out into the woods our orienteering course does the same thing (56). I would say that even our snowshoeing (52) and cross country skiing (53) it's really about building the basic knowledge or the knowledge they need to be successful to then do it a little bit at Eagle Bluff (56) but then really go back and do it wherever they're from (58). So it's not such much of a slap these on and lets go for a tour or that sort of thing it's really building and front loading that knowledge. (55)

4) On a daily basis what physical activities do you offer your students?

The thing is that they can choose. So any group that comes here can really pick from that variety of classes. So it runs across the gambit depending on in what that schools interest and objectives are (59). I will say that every single group gets out there and gets hiking (8). And every single group either picks rock climbing (16) and tree tops (51). We don't have sort of a set you come here you do same set of procedural activities for every group

that comes in here you can kind of jump around. But I would say in the spring canoeing (13) twice a day for five days for the whole month of May and June.

5) What education do you have around healthy lifestyles and maintaining physical fitness? This kind of gets back to my previous comment. So about five years ago we had a program that we created that was funded that we called celebrating healthy active kids (20) program the CHAK program and what we tried to do was to overlay a physical fitness and wellness piece (20) over the trip and we had them sort of like information about their activity (20) about it and journal about it and record things (60) and then once they got here they would do the same and then once they got back to school (58) kind of look at each before and after information and kind of make some conclusions (61) as to how they can keep being healthy and active (20). Which in theory was really great. Sort of the logistics piece was having to sunset it (62). Getting pedometers (63) to students and having them not lose them and not having the journal (60) and pedometers (63) not become a distraction while they're here. And then healthy active lifestyle (20) piece was just one too many layers for this trip focus because many schools are focusing more on let's get outside and enjoy ourselves (23) and know that the outdoor is a great fun comfortable place (50) in addition it's science literacy (34) and the classes their taking here imbed a lot of science (34) so like the archery class (64). They can choose to have an archery class (64) or they choose to be an engineer and engineer their equipment is the science piece (34) and then the soft skills (38) the teambuilding the community building (7) that's happening it was kind of one more thing which is an awesome result of being

here and in my opinion was a great holistic experience but it distracted (65) from what we had heard from teachers as being the primary focus. Even though we know that's super awesome and amazing. We know that kids were enjoying themselves (50) and learning about healthy lifestyle (20) but that's not sort of overt.

6) How do you guide students to be more responsible and respectful of themselves and others?

   We actually have the 4 r's respect yourself, others, eagle bluff/ environment and we tack on equipment and those 4 r's pervade everything (24,26). They're posted around our campus on our instructors (49) reference them during classes often times they will lead off classes with respect and they will give examples of how to be respectful throughout (66, 24,26). And so that culture pervades during classes (66) and just sharing space too that's something we try to reinforce so that if we have multiple groups here we try to make sure that each group has a large group presentation together and that every group similar seating arrangements so every group has an equal part of the presentation and we're mindful that we need to use respectful language (25) and that I think ultimately that's reinforced by the stewardship message that's in our classes that's not only using respectful language and being respectful to each other (25) then how can we be respectful to the natural world (26) and the stewardship (37) and how can we be responsible in our choice and our actions (67) and a lot of our activities that are in the classroom end with the stewardship message and then also when they stay at eagle bluff their doing

stewardship activities (37) like recycling and turning off the lights and composting their food and making appropriate food choices so they don't have a lot of waste (67).

7) How do you develop the values of physical activity and healthy lifestyles in students?

   I don't know. I think we tried to with the chak program make it and be more of a focus. I don't know it's because that message and concept isn't mission driven it's another awesome result of doing the activities that are also connected to our mission. I don't know. I would love to know. That's a great idea to make it all work

8) Is there anything else you would like to add?

   No just kind of what I just got back to. An overnight outdoor experience (40) has so many benefits from the community building (68) to opportunities to really deep science (34) and having awesome outdoor experiences (27) that just adding that layer of and it also is a really good healthy thing to do is an amazing opportunity and I would love to know if there are some ways that we could highlight that in a little more intentional way but that isn't really logistically difficult or maybe shift the focus of what our more mission driven respect stewardship (37) and connecting people to the natural world. (2)

Interview #3

Interview Wolf Ridge 10/29 10am

Shannon Walz

1) Our mission is develop a citizenry (69) that has the knowledge (30) skill (70) motivation (71) and commitment (72) to work together to build a quality environment (73). When kids come up here they come 3-5 days physically and sometimes longer depending on the program (40). In the summer (11) we have kids stay here almost 4 weeks. Through our classes and experiences that we provide we really work to foster awareness and curiosity (5) and sensitivity to the natural world in our class content (6). Provide experiences for them to come back so they come back for school as a summer camper and we also programming for families and road scholar so letting them tap into environmental education at all ages (74, 30). We work on social understand (75) and respect cooperation as the social aspects of them working together and social aspect of being a member of society (69). We model those aspect in our naturalist that we have on site and as well as how we have developed our facility and what messages that says about conservation stewardship and how does that support our mission (76). We actively promote the concept of conservation and stewardship in our classes (66, 37). It's a very big part of them. And it's one of the goal is to select one and focus on while they're here and even if they don't select one they would be still getting that in their classes (66).
2) Our classes (66) are based on the outdoors (10). A lot of them and I guess I'll just list ones that are the skills based (17) ones and gives you some examples based on what you're focusing on. In our k-12 program (4) we do Hiking (8), canoeing (13) orienteering (54) team building (7) we have a ropes course (51) survival skills (77) snowshoeing (52) cross country skiing (53) we do scientific field investigation (78) so those are the ones that we do during the school year. And in the summer (11) in addition to those things we

add on kayaking (12), backpacking trips (79), sailing (80) rock climbing (16) and in the winter we do dog sledding (81). If you can do outdoors on the north shore of Minnesota, we do it. It's amazing and we work to promote that accessibility of the skills to say hey this is something that you can do on your own (58) I guess I didn't throw in their camping (82), camping is a big part of it in the summertime.

3) So for example all of the above things that I listed of the outdoor activities we intentionally teach as a skill (58) we have classes on survival which focus on survival (77). Or in our field investigation class they will be hiking and they might be hiking every single day hiking is specifically addressed (8). The idea of doing that as a life long sport (58). We actually focus on building each of those skills (56) in all classes that correspond to each of the ones. On a daily basis if there's not a class (66) about those things they might be taking beavers class and in beavers class (37) they might hike (8) down to sawmill creek and we might not emphasize the fact that we're going on a hike on a hike now but we do in the beginning of the classes tell them we're going to be outside for 3 hours so let's make sure you have the proper equipment (83). And then we go through the proper equipment is and why and stuff like that (83). If our classes aren't specifically geared towards a skill like canoeing (13) or orienteering (54) we do try to make sure that the students do have an understanding and appreciation of what it takes to go outside (23,24) in all the rest of the classes.
4) Because our program is a class (66) based program the only consistent thing they would do every single day that is a physical activity is they hike (8) from 1 to 5 miles by the end of the day depending on the classes that they take, so hiking (8) is an integral part and

then also another physical thing they do I can guarantee is they will have the opportunity to physically explore the natural world (5) after that during their 3-5 days I would say that I would guarantee they would have the opportunity to do rock climbing (16) or ropes course (51). Our rock climbing (16) wall is an indoor wall during the school year and that type of activity happens during their stay and I would say that students in addition typically teachers take one skills oriented course while they're here whether it be a night investigation course (84), a team building course (7), or orienteering (54) or a basic skill one. And one that I totally forgot about but during the summer we also do archery (64).

5) A great number of our classes cross country skiing (53), snowshoeing (52) rock climbing (16), hiking (8) those types of classes we are working on teaching lifelong recreation skills (58) in those classes we talk about the benefits of getting outside (85), eating (39), doing exercise (22) like that and developing those skills so they can a experience the natural world and do something different with their bodies (58) as well we have that and we actually do quite a bit of education on the food that we serve (39) that we serve in our dining room and why food choices are important.
6) A lot of that has to do with the expectations we set in our classes (66). As also pretty much every single group that comes here does some sort of team building (7) class whether it be the ropes course (54) rock wall (16) or our team building and team games classes (7). In an overt way they get that while they're here and we debrief what it means to be a team member and support each other (1). We have some main goals that teachers can select when they come here and it could be academic standards team building (7) science (34) or stewardship and conservation (37) and they kind of check and we even

though the students might be taking civics class they have an opportunity to work in small groups and learn to work together (7) we mix it in some of those soft skills (38) that might be a little hard to measure but the expectations are set in how we facilitate the learning process.

7) One of the big ones is modeling our staff members (76) are active people who enjoy outdoor activities and healthy lifestyles and they model that by the way they talk and their enthusiasm and we work really hard to create positive experiences (2) so for example the first time they go cross country skiing we are looking into saying how can we make this a empowering experiences so that you can walk away saying great I hope I get a chance to do that again (58) and we have the ability to work with a wide range of skill sets so in one cross country ski class (53) we might have half the group whose never skied before some of these kids who have skied a little bit and then some kids who have skied a lot (86). And how we divide up our classes spaces outdoor we are able to provide different levels of challenge and provide feedback where people from a wide range of skills are actually successful (86)
8) The one thing that wasn't actually a question that I think is interesting is we actually in the summer (11) run some high school programs (4) and one of them is called ecology (33) camp and they come for 4 week and we also run some after school programing (4) for students in the Twin Cities and Duluth area and they come up for 2-3 weeks in the summer and the high school students can get college credit for their experience here they would get two college level physical education credits (87) and three college level

ecology credits (33) we are already recognized for the physical education that we provide at the college level.

Interview 4

John Hueskinveld – Treehaven November 6th 2014 10am

1) How do you meet your mission?

   Treehavens mission is natural resource environmental education and within that mission is listed both education research and recreation (27) so I kind interpret that as, and not that all three have to be part of the activities that we do at all times but those are part of what we do throughout the year and at some time we address all of those things. The research (88) part is done largely toward Kevin in land management although we have connection on the education side. The education side (18) predominately through program and what we do with the grad fellows and my side of things with that being said Corky does some education and Kevin does some education. And then there's the recreation part. And the recreation happens solely on the program side of things. My personal belief which is actually backed up by some research when you deal with audiences who have relatively less experience in the environment and the outdoors one of the first ways to get their interest or to create appreciation (2) is to get them outside and to do something that's fun. I firmly believe that it could be canoeing (13), cross country skiing (53), snowshoeing (52) those things become a vehicle to greater appreciation and understanding and you can get increasingly complex in the lessons and in the topic and themes that you introduce to those people. In our mission we strive to create

environmental education program (30) which incorporate those themes and in particular in related to physical education I try to introduce things that are fun and physical and outdoors as a vehicle to do some of that environmental education.

2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?

   Boy a lot of them! I'll try to think of the whole list here but keeping in mind that a lot of our activities are winter time because we've found that fits in the schedule then it tends to be a really fun experience for the students we can integrate tracking (89) and exploration while in snowshoes (52) we can kill two birds with one stone so to speak. On the short list we have cross country skiing (53) snowshoeing (52) of course hiking (8) lots and lots of hiking that we do and that's all year. We do have Frisbee golf (90) that we can introduce to the students as a fun thing to do we have the team building exercises (7) that we do out in the field with a whole host of other games that are in addition to the three that we do. There's a whole host of things they can do blind folded games and challenges and stuff with balls that are out on the field. We take all ages (30). For example we just had the adventure leadership college class Saturday morning out on the field and they were doing a bunch of challenge games, in addition to the team building (7) exercises and we did a compass exercise (54) which involves moving across the landscape. In the winter time the whole host of wintertime I would include sledding (91) as well and in the warm weather months we do canoeing (13), everything from 4th graders to high school kids (4) to I just took another canoe trip with the learning is forever program out of

Stevens Point so we had retired folks came down part of the Wisconsin River (30) there's a little bit of all of those kayaking (12) would be included as well but we do more canoeing (13) than kayaking. We have a half a dozen kayaks (12). I'm trying to think if there's anything else. Oh we do volleyball (92), snowshoe volleyball snowshoe kickball (93), all of those traditional ones but with a twist.

3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?

   Explanation back and forth

   Well the best example of those are the college classes that we run. We do snowshoeing (52), fly fishing (94), cross country skiing (53) and backpacking (79) and actually another one is leave no trace ethics start out at ground zero and brought along increasingly involved activities that focus on skills (26). So fly fishing may start out with learning how to cast out on the grass and then graduate to going to a pond and then from there going out to a trout stream on their last day. So those college courses that's what they're all about its' about the progression of improving their skills. To the point where at the end of the weekend they have now 20 hours of contact. At the end of the weekend they should be fairly proficient in that activity. Its less so it's more of a rotational thing where one of the rotations might be snowshoeing and animal tracking and do they get a chance to back and snowshoe again after that activity, probably not. It's works better in the college programs but less so in the k-12 school programs. Occasionally we have some groups that we will teach cross country skiing to them and they will have another

opportunity in their time frame for an hour and half where it's open and they'll have the opportunity to go out again. They learned some skills and they want to do it again. Particularly speaking when you have that rotational set up with kids you have a shot at this and a shot at that.

4) On a daily basis what physical activities do you offer your students?

   Well if you're talking about an activity that happens in a rotation you're talking about there would be snowshoeing (52) everyday but it's a different group of kids that are in that group that are getting that experience that are rotating through. I would say that cross country skiing (53) snowshoeing (52) and hiking (8) are going to happen at pretty much every winter group that we have.

5) What education do you have around healthy lifestyles and maintaining physical fitness?

   One of our programmatic themes is lifestyle and leisure and it has to do with building healthy lifestyles in the outdoors (27). So we try to offer opportunities to come and learn how to cross country ski (53) and go canoeing (13) that we consider to be healthy lifestyles. We also have tried to make some strives in our food service to offer healthier local foods which fits into that healthy aspect (21). And those activities which are physically challenging and engaging are promoting physical fitness as well (20). But interestingly enough is thinking about it the school kids when they come in are getting some healthy choice menu items (21) so they're not getting doritos or hotdogs so they're getting healthier choice menus. But we're not overtly educating them about those healthy

choices and maybe that's an opportunity of us (19). We're not saying 'hey we've been out snowshoeing and here's how much water your body metabolized during that time and here's the food groups that you need to be addressing to make sure you replenish the essential nutrients to say healthy.' And we don't have that kind of follow through on all things that make a healthy lifestyle (19). We just kind of get them out and do the activity and they experience. They are encouraged to drink water and eat a healthy meal. On a physical fitness side we don't really tell them 'hey you need to do this two to three times a week to maintain a healthy heart' we don't really talk about physical fitness notions and what you need to do to maintain physical fitness. It could, we could integrate into what we do, but it hasn't been. That's not a bad idea.

6) How do you guide students to be more responsible and respectful of themselves and others?

   In the toughest cases we write down a set of norms. It's a collaborative group technique in which you write down expected norms of behavior which we can all agree upon and you literally seek agreement or consensus among the group for behavior such as listening while others talk, respecting others, no bodily harm and participating in the activities (24). Any questions, raise your hand if you can. I've done that especially with some of the urban groups that we have that can be a little bit less focused and it seems to help. In general the school groups that come are policed by their own staff. It's less so that we're having to force that respect it's easily addressed more in the school group. For us it's more of a subtle thing normally we might put out the standards of behavior to begin with.

With teaching its' more like 'hey raise your hand if you can hear me.' To get them to listen again. That's an interesting thing from an overt standpoint, the notion of respect, I don't know if we introduce that as a theme to the students and say hey this is what you need to do to show self-respect and you need to do this to others to show respect (19). It's more implicit. It's more under the covers that they can contribute and learn and have a positive experience that's building that respect. But again much like maintaining physical fitness it's not pointed out. Its' an underlying theme. We teach responsibility toward the environment (37). But we don't' say that by caring about composting and recycling that we show self-respect and respecting others by respecting the environment. Or by participating in this class you're showing respect to other people by listening we don't lay that out, it's behind the lesson. I'm not convinced that couldn't be addressed.

7) How do you develop the values of physical activity and healthy lifestyles in students?
I think that goes back to the first comment I made. When they realize it's fun (50), when they get to a hill and slide down it you see smiles crack on their faces if not hoots and hollers they realize it's fun to do those things. or snowshoeing they think it's awkward at first but then they realize that they can stay on top of the deep snow and go over hill and dale and have a fun experience that helps them value being outdoors (2) and helps them realize that with a little bit of training and encouraging those things are fun to do physically I think it helps to guide them. The staff makes a difference (76), if the staff is acting like this if fun and really cool kids are more likely to be brought in and engaged and think it's fun too.

8) Is there anything else you would like to add?

I think it's especially important when you look at different types of learners so there are people that need to have something physical as part of their psyche or make up in order to involve them and create connection. If all we did was sit them down in a classroom with no windows and provide air-tight lesson plans with great information that's just not going to reach some people they tend to be more hands on and not to mention the things we do are almost always outside that adds an element as well. You're mixing the environment with physical activity that's where that magic can occur. It's so important.

Interview #5
Libby Dorn- Trees For Tomorrow
November 7th 2015, 3pm

1) How do you meet your mission?

Through good education (18) and what we're doing now in our mission is to present balanced objective information on the wise use of forests and trees (6). But that also includes presenting and doing which isn't in our mission in hands on way through inquiry based science education (94). Investigations with the scientific process in mind. Collecting data on water quality soils on geologic structure, strata, climate change, weather patterns wildlife (6) everything that goes along with that the sustainable forest and forestry practices and exposing students to sustainable forestry practices on national state and county forests (10) and that's what our mission is all about, and this is a shift for Trees For Tomorrow but bringing us back to our missions through inquiry based science education (94).

2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?

What we used to do was physical education on it's on. We had outdoor recreation classes on skiing we would do in fact a day and half with skiing (53) for three days. This is what we used to do we used to do hours' worth of snowshoeing (52) during their typical three day two night stay here. We used to take them canoeing (13) as an end to itself but now what we're doing in order to collect scientific data (78) on those components the forest itself in order to show conservation and demonstrate conservation and a total hands on way for students (67). So the students are going out into forest or going out on the water exploring (5) those things we talked about the geology the wildlife collecting data based on a question that they come up (78) with be able to analyze that data and to involve professionals in the field and helping them to analyze that data to make sure their headed and basically they're looking at the data and look at it in a professional manner and give a presentation on what they found in the forest or in the water or the geology or wildlife or changes in populations (94). Successional stages. And in doing that getting back to the physical education end of things we use hikes (8) of getting there as a way of looking at different areas or going to different lakes. Or skis (53) in the winter time we look at it as a way of getting into the forest and different areas. So including infusing that physical education standards and physical education in what we're doing. Snowshoes (52) the same. Being able to carry equipment on our backs to get to an area of the forest where we're doing transect studies for instance and with the canoes (13) again something we

haven't done in the past. We always would collect data (78) from the shoreline and now we're able to use canoes (13) to take the students out and we'll first give lessons on safety and how the students to use the eckman dredge, chemical tests, field computers, place some iPad on the shoreline and we'll wire back information from field computers so the iPad on the shore can start to graph our data (78). We're getting much more into using physical education as a tool rather than an end to itself. And we'd sure like to use kick sleds in the future.

3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?

   Talked about inquiry based science data collection, analysis and using proper tools to prepare for future.

   In the past it's been an end in itself and probably too much taught and practicing skiing or snowshoeing (52) or canoeing (13). Our goal now is with the students to before they ever go out in canoes or put the snowshoes on or once we do put the snowshoes/ skis (53) on as we go out there will be a sufficient enough time. Let's take the case of skiing, to know how to fall, to know how to get up how to go down a hill some of the basic skills, to know to push forward, to know the rhythm, to know balance, skiing stroke why do you use poles. Really getting the basics down well (86). Same things with snowshoes. I've fallen and tripped on snowshoes many a time getting the walk down but not only knowing how to do it but also the history behind (95). The history behind it. Why do we have skis here in North America, I thought it was a Scandinavian tradition how did they

get over what types of skis do we have? Telemark vs cross country vs downhill and why did we initially use them, was it for recreation? Same thing with snowshoes, native American using different types of snowshoes and how did the different types comes to be and why do we use different types in different conditions. Those types of things and how the sport or equipment evolved over time based on our needs as a culture (95). We do spend enough time canoeing the j stroke how to steer from the back where should your center of balance be how to hold the paddle. We have problems with student's crossing over [the paddle] to switch your hands and how to do those types of things. We practice the basics make sure we have all the safety standards down which is the first thing of any program is always safety. And then using the tool to do what we need to do (27).

4) On a daily basis what physical activities do you offer your students?

   For sure hiking (8). In the wintertime snowshoeing (52) and probably skiing (53) on the same day depending on where we're at. Canoeing (13) is limited to the fall and it wouldn't be on a daily basis. It would be a part of a water quality program (10) probably one day out of three either in the fall or the spring. I'm thinking of any other activities. Compassing, geocaching using GPS units (54). Because we have a lot bogs around here we do a lot of bog hikes. We talk about sustainable forests so we use our bogs quite a bit. By and large it's hiking to get out to the spots where we're doing the hiking. And then if they're late for the bus running to catch the bus.

5) What education do you have around healthy lifestyles and maintaining physical fitness?

I do have to mention that in the summer (11) we do swimming (96). We do swimming with mostly local kids and we use silver lake. To stay healthy I think its part of our sustainable mission because part of being sustainable as a center and a population is to stay healthy not only physically (20) but mentally as well. Respecting each other (24) thinking positively (97) is all about creating a sustainable organization. Our kitchen tries to look at healthy food choices (21) for people who visit here. For instance if someone is vegetarian they offer vegetarian menus but I think by and large they look at healthy foods for serving not only students but road scholars as well (30). Our predominant audience is students. I think respect for the environment (26) promotes health within ourselves. I think respect for the environment promotes healthy within ourselves because if we respect the environment and what it gives us and what we can give back. And I do believe that helps us to resolve issues we may have with our own selves physically (20). I think it's all part of that stewardship and sustainability (37) model that not only means sustain your environment and sustain yourself. So we want a healthy environment but that also comes back to us having a healthy self both physically and emotionally (20).

6) How do you guide students to be more responsible and respectful of themselves and others?

I'm just going to take one activity first this is going to sound small but it works well for us. Our dining hall our kitchen we have school groups pick specific students every day to collect the compost (67) and they have a challenge that we have out there that if you don't want to eat something don't choose it off our salad bar. Eat what you can eat and

clean your plate so that there's very little waste (39) (67). I think that's respecting others (25) at the same time as respecting the environment (26) and whatever students go out and whatever is left over they place it in the compost pile but it is sign of respect that they do cooperate together (68) to help each other out for those types of things and show each other the importance of no waste. I think also within the dorms there are expectations of respecting each other (24). Belonging being respectful (26) of the buildings, the staff, the cleaning staff, the cooking staff the educators, I think we probably need to have I think the staff needs to work on that more as a whole. That the students need to clean up the rooms before they leave as a sign of responsibility (25). So many students don't know how to use a broom or a vacuum and if its' not happening at home at least we can start them here. Being respectful of each other and keeping your area clean and being respectful of the facilities and the staff that has to go in after you. I think also within programs respect for wildlife (26). We do have two education birds (46) here and the program which is led by Laura and Kim bird handlers we have a great horned owl and we also have a red tailed hawk. The respect that bird handlers give to the birds and the respect that the students give in the same room I think is an excellent example of how to respect our staff and how to respect wildlife and to respect each other within our raptor program (76). When using equipment or participating in small groups they need to respect each other's ability to contribute (75) and respect each other's input and your input is just as important as his/her input (42) and respect of the equipment whatever they're using chemical tests science computers or canoes respect any equipment. The skis the snowshoes whatever is here. I think that respect (24) for each other is much important

than respect for things everything leads together to create an atmosphere of responsibility (25).

7) How do you develop the values of physical activity and healthy lifestyles in students? Probably during the programs which we're actually out in the field. And in our introductions. As we're learning how to ski or snowshoe that's a really important time to talk about the value of physical education within their lifestyles and creating a lifelong learning for snowshoes (58). Even though we talk about using these equipment and physical activities as not an end in itself but a tool but it still gives students who may not have any opportunities to have any type of equipment the ability to go home and say to their parents and brothers and sisters hey we should go out and we should be snowshoeing and cross country skiing and I know how to do this. Mom lets go on our and do this as a family and create a lifelong situation which they then will hopefully are able to take it back to their children as they get older. The basic exposure to it and weather they like it or not at least they've been exposed and have a positive attitude with 'yes I can do this and I can do this on my own, take a friend, take my family and it's fun and good for me at the same time.' We also have a group that I'm not talking very much are road scholars (74). They do come here specifically for we have a week of cross country skiing (53) combined with a week of snowshoeing (52) and they're here specifically for that physical education activity (22) here in the Northwood's that's two different sessions of one week each. We also have two different sessions of biking (14). We get out on the northern roads and bike trails and we ride for some pretty good distances. We typically

give our road scholars opportunities (74) to ride different distances and that's an entire week in itself. Within that particular program we are looking at physical education opportunities. We do need to reevaluate that and get a more sustainable message in there.

8) Is there anything else you would like to add?

   I would be very interested to see your final report. Any other tools that you think we should be using would love to learn more about that.

Interview #6
Ferry Beach Ecology School
Alex Grindle Thursday November 13th 2014 9am

1) How do you meet your mission?

   So our mission is the science of ecology (33) and the practice of sustainability (67) and so we do that in lots of different ways the primary thing that we do is residential programs for students (40) we get students from all over new England and we get kids overnight from anywhere from one night to five days learning about the ecosystems (6) in the area and how humans fit into that (2) but we also do programs and we do outreach (45). We work with a number of school districts we work with K-8 on a continuum (4) with them and we also do things likes summer camps (11), program and conferences but the majority of the students we reach is through our residential programs.

2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?

   We don't do anything specific physical education (19). All of our lessons are outside based (10) and there's always walking (8) to and from the ecosystem. So I think that

probably the biggest thing we do is having students outside (10). The big piece is when they have free time during the day the teachers are with them they generally use their rec time to be outside weather that's playing volleyball (92) or playing on the playground equipment or being down on the beach (10) it depends on each school who's chaperoning what they do and what they have access to. But a huge majority of students spend an enormous amount of time outside compared to what they normally do in their day to day life at home. Our lessons are full of activities and games that they're that are active (9) but they're not like dodge ball it's playing red squirrel/ gray squirrel. It's that students take on the part of a red squirrel or gray squirrel and try to survive the winter and that kind of thing.

3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?

   The thing is that I don't have a great example. We don't really focus on the team building aspects that comes through our program more organically sort of as a day to day. If I had to pick one thing the idea of being outside (10) and that becoming the classroom (6, 10). Which is a skill kids are used to sitting at a desk with four walls and teacher and all of a sudden and they're here on our site in small groups with someone they've never met before and being outside all the time so it starts with the first lesson the students have involves a lot less walking and an introductory lesson the ecosystems (6) and to how we learn here how to work in a small group (68) who the educator is for the week and throughout the time they're here they progress a little begin to go and little further in the

field (56) and be more independent in terms of the group work that we do so that kind of builds on itself in that way but nothing is concrete as learning how to rock climb.

4) On a daily basis what physical activities do you offer your students?

   So again being out and about on lessons (10) a lot of the lessons are here on campus but even the forest lesson where they're using the forest on site they're outside exploring our forest for two hours (8) we do have a lot of lessons about the salt marsh which is about a ten minute walk (8) away that the students go to and the tide pools is climbing over rocks so on lessons they're doing those things and then the time that have between lessons they're outside and they're running around and playing volleyball (92) and it's a fair amount of time that's at their own discretion but they because of the access to the playground the volleyball and beach they tend to use that time being active.

5) What education do you have around healthy lifestyles and maintaining physical fitness?

   I think that the biggest piece we have is around food (21) and food systems that's a big piece of our curriculum and the education that we do and it comes into play a lot of ways whether that's taking students out on lessons into our garden (94) and pulling up a carrot and seeing that a carrot comes from the ground and having them taste a fresh carrot (39) or whatever vegetable it is. At our meals when we have students residentially we have them eating three meals a day with us and we've been really lucky with the chef we've been working with he does a really fabulous job providing kid friendly food that is healthy (21) for instance our pizza is on a homemade whole wheat crust and when kids go away its' often their favorite meal and when kids go away it introduces them to healthy foods which are kid friendly and healthy and talking about where food comes

from and how students play a role in that. We talk a lot about food education and around food waste (67) and we work hard to strike the balance. We work hard to encourage students to eat the food that they put on their plate but not getting into the eating contest of eating everything that you can just making wise choices (67) about what they're eating and making those choices and we build that up throughout the week while they're here.

6) How do you guide students to be more responsible and respectful of themselves and others?

   I think that's a big underlying component of our program it starts very basically with the basic rules with any group that's here. Respect yourself, respect others (24), respect nature (26) and we come back to that and respect being a big word that we use we really work hard to create a sense of community (68). And our educators model really well what it looks like to be part of a healthy well-functioning community in terms of getting along and having fun and being respectful of one another (76) and holding the students to those rules of respect and having fun while learning (6) and being respectful. One of the things that we do is the students are with the same educator the entire time that they're here so they really have a chance to build that relationship and build that sense of respect and have that same expectation during the time that they're here.

7) How do you develop the values of physical activity and healthy lifestyles in students?

   Again I think it's mostly through role modeling (76) it the kids are here enjoying their time outside they're seeing adults doing the same thing. We certainly the teachers who are here and the chaperones who are here are conscientious of their computer and phone and all that sort of stuff and so we're modeling for the students us being outside and

being unconnected from technology (29) and having fun with it. It's mostly comes organically they're here for the week they have opportunity to see adults being outside (10) and enjoy themselves and do the same for themselves out on lesson and having fun and learning and if a kid walks away from here thinking they want to spend more time outside (23) then we feel successful in what we've done.

8) Is there anything else you would like to add?

   It's not specific physical education activities and the idea of being outside and enjoying yourself goes a long way towards being physically active.

Interview #7

Clarissa Allen , 4/10/15 1:15pm

1) How do you meet your mission?

   Islandwoods mission is focused around stewardship both of the environment and natural communities (37). So school night programs focuses on, this is a very strong part of our curriculum. We're providing exceptional learning experiences through experiential hands on education (36) in a place based learning environment (99) focusing strongly on the ways that we connect to the natural (2) and human communities (1) around us. So we teach two ways that humans can take positive action to resonate throughout these communities.

2) What different outdoor activities do you provide for your students? Kayaking, hiking, games?

   Our student's do quite a bit of hiking (8) during field study we play lots of different kinds of games. We have a low ropes challenge (51) course some of the students incorporate

yoga (100) into their field study and the biggest thing is each student is outside in an outdoor classroom for over six hours every day (10) so they're very active going to and from our different field locations.

3) What activities or skills do you teach that allow a student to grow and practice to improve the performance of that activity or skill?

   We actually don't do a lot of that. I would say that the biggest skills that we teach are the safety skills of being outdoors in an outdoor learning environment. Those are things like proper hydration, dressing for the weather, how to navigate across uneven terrain while hiking (83). Since we don't do more of the adventure education we don't do kayaking or canoeing or anything like that we don't focus on practicing skills (19) other than how to travel in an outdoor classroom.

4) On a daily basis what physical activities do you offer your students?

   Definitely hiking (8), we do play a lot of movement based games. We also have an artist in residence each week and sometimes for instance one of our artists was a movement based artist so the students were dancing (101). We have a low ropes challenge course (51) and several of our campus features require physical activity. We have a canopy tower and it's just a big ole stair climb. In our garden students are physically active harvesting such as digging potatoes and contributing to different projects we have there. (102)

5) What education do you have around healthy lifestyles and maintaining physical fitness?

   I think that we don't focus on physical fitness (19) but we do talk a lot about healthy lifestyles through the lens of stewardship (37). Our dining hall curriculum focuses on

caring for ourselves and our communities by making good decisions about what we put in our bodies (21). The basic idea is that we want food that is both good for us and the planet. But we also talk about we do an investigation in our dining hall about reducing the school groups amount of food waste throughout the week (98). We also focus on balancing that with what is good and right for your body. Making good decisions about how much to eat, when to stop, when to keep eating not peer pressuring other people in relation to food (24). I think that our dining hall is our strongest connection to that. And then all our stewardship lessons are about positive actions that we can take in our communities. The topics that are talked about by instructors are what does a healthy community look like, what does a community need to thrive? More of a community focus around that (68).

6) How do you guide students to be more responsible and respectful of themselves and others?

   Comes back to our stewardship focus. We talk about stewardship for the natural world (37). We talk about caring for other organisms and the natural systems around us. And we also talk about our cultural communities, so respect for others and positive interactions there (24). Respect is one of our four rules at Islandwood with the students we go in depth over the course of the week. Students also have one specific stewardship piece where they borrow and care for their own gear over the course of the week and help other students with that (25). And then in the dining hall we eat family style there is different table captain at each meal who is caring for the rest of the group and getting food and making sure people have what they need. We also do that same style with

community picnic lunch each day. So between the dinging and the community agreement the core lesson were students are setting norms for their group for the week in terms of how they want to interact with each other. We are really pushing how to be responsible (25) for yourself and to care for and support others.

7) How do you develop the values of physical activity and healthy lifestyles in students?

   I think that one of the coolest things that we do is professional development with our teachers who come (30). And many of them are their PE teachers at their school. We have an opportunity to do professional development with them in terms of community stewardship. That is connection to healthy lifestyles (20). For the values of physical activity that's an imbedded value (20). We're spending more than six hours a day outdoors actively moving from place to place. The healthy lifestyles really just comes back to our dinging hall where we're talking about food that is good for us and community norms around sharing and things like that.

8) Is there anything else you would like to add?

   No I have nothing to add.