Nature as the Teacher: Exploring the Development and Growth of Nature Schools in the U.S.

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AUTHOR: Emily Gehrdes

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Abstract

Nature Schools are places in which achievement, curiosity, development, and inspiration transpire in natural environments. In the early 60’s, Nature Schools began to appear around the country. Since then, many such schools have appeared; today there are over two hundred nature schools throughout the US. Yet although a substantial amount of research has been done on nature schools, there exists no baseline or census exploring these programs’ strengths and weaknesses. This capstone research project investigated these schools’ policies, procedures, and curriculum through a multi-phase mixed-methods research design. Specifically, a national survey was distributed to the directors of approximately 140 U.S. Nature Schools and such data triangulated through several phone interviews. The conceptual framework and subsequent data collection and analysis is driven by two key literature strands: (a) that Nature Schools have three key characteristics in common: learning is a recurring, long-term process that takes place regularly in nature; learning is sensory, experiential, and kinesthetic; and learning happens in a democratic and holistic nature (O’Brien & Murray, 2007; Bentsen, Jensen, Mygind, & Randrup, 2010; Ridgers, Knowles, & Sayers, 2012); and (b) that small businesses, such as early childhood education programs, go through five phases of growth that leaders should be aware of and able to work through: inception, survival, growth, expansion, and maturity (Scott and Bruce, 1987). Through this research I discovered three key themes throughout the data; the power of an emergent curriculum, the value that is placed on the commitment, community, exclusivity, and curriculum of Nature Schools, and challenges within Nature Schools as business. These findings provide a look into the inner workings of Nature Schools and offer a basis for future research to delve deeper into the sustainability of Nature Schools within the U.S.

Keywords: Nature School, Independent Business, Youth, Outdoor Education, Emergent
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Introduction

Nature Schools are places in which learning takes place in the natural world. A school where achievement, curiosity, development, and inspiration transpire in environments that are not cultivated by humans (O’Brien & Murray, 2007; Bentsen, Jensen, Mygind, & Randrup, 2010; Ridgers, Knowles, & Sayers, 2012). Nature Schools have three key characteristics in common: learning is a recurring, long-term process that takes place regularly in nature; learning is sensory, experiential, and kinesthetic; and learning happens in a democratic and holistic nature. In such environments students – typically ages 3 to 9 (O’Brien & Murray, 2007; O’Brien, 2009; Ridgers, Knowles, & Sayers, 2012; Michek, Novakavo, & Mendova, 2015) – learn from the environment around them improving upon key developmental skills including (but not limited to): cognitive, social-emotional, physical-motor, observational, and creative thinking (Swarbrick, Eastwood, & Tutton, 2004; Louv, 2008; Yildirim & Akamca, 2017). Since early 2006, there has been a boom in the number of Nature Schools that have been founded in the United States. This is promising, however, there doesn’t seem to be research focusing on the functionality of U.S. Nature Schools. For U.S. schools to excel and succeed, as European schools have for many years, we need to take a deeper dive into the fundamentals of Nature Schools as a school and as a business in order to educate school leaders on what they might be able to do differently to ensure that our children are able to learn through nature.

This study will first define Nature Schools, then present and explain the theoretical framework that makes up Nature Schools in the U.S., and finally explaining the process of building and sustaining an independent school. Through multi-phase exploratory research I evaluated Nature Schools and offer a discussion on what changes could be made to improve the field.
Literature Review

This section focuses on defining what a Nature School is in order to give context and understanding prior to outlining the theoretical framework of Nature Schools in the U.S. Finally, I explain the need and process for a comprehensive business model for a Nature School, as an independent school, to succeed.

Defining and Contextualizing Nature Schools

Schools are a place where the majority of children spend their time. Nature Schools provide an opportunity to educate children in an outdoor environment. Historically, Nature Schools first began in Europe, particularly in Scandinavia (Cree & McCree, 2012). With the industrialization of Europe, families were living in increasingly urban settings, spending more time in cities, and less time in clean, fresh, outdoor settings (Knight, 2013). Sara Knight (2013) states that “it was this separation of the people from their natural environment, which started in the industrialization of the nineteenth century, that drew the attention of educationalists and health professionals” (p. 3). Leading experts at the time saw a need for education to be held outdoors, particularly for kids whose families’ lives had changed significantly from living in an area with the outdoors easily accessible to crowded urban environments (Knight, 2013). Schools began slowly morphing to include opportunity for education within Nature as a way to bring kids who were living in areas with decreasing time outdoors (Cree & McCree, 2012, Knight, 2013). Knight (2013) states that “these were often a response to crises in society, caused by industrialization” (p. 3). She sees the creation and evolution of Nature Schools as a reactive solution, in response to the changes that were taking place at the time and that are taking place in society today. Concepts such as Margaret McMillian’s ‘Open Air Movement’ in the early 1900’s was in response to the lack of a natural real-life environment in the slums of London. Although
there were many challenges faced, she was praised for improving “post-war children health” through her program (Cree & McCree, 2012). In fact, it was said that “open-air treatment had a remarkable effect” (Cruickshank, 2006, p. 65).

In the U.S., experts have seen a decline in key developmental skills among children since the 1950’s. Richard Louv coined the term Nature Deficit Disorder (NDD) in 2005 to describe the effects an absence of nature has on humans, in particular children. NDD is the gap between humans and nature which, in turn, negatively impacts their health and well-being (Louv, 2008; Louv, 2010; Sandry, 2013). According to Louv (2008), key developmental skills such as cognitive, social-emotional, and physical-motor, are lacking due to a deficiency of time spent outdoors. Louv quotes a family therapist and bestselling author on nature and our brains; “neurologically, human beings haven’t caught up with today’s over-stimulating environment. The brain is strong and flexible, so 70 to 80 percent of kids adapt fairly well. But the rest don’t. Getting kids out in nature can make a difference.” (p. 103). Children are at a time in their life where nature is of the utmost importance to healthy development (Fjortoft, 2004; White, 2004; Gray, 2011; Knight, 2013; Yildirim & Akamca, 2017). Research shows increases in many key developmental characteristics among children who spend more time in nature, including those who attend Nature Schools (Swarbrick, et al., 2004; Louv, 2008; McCurdy, Winterbottom, Mehta, & Roberts, 2010; Louv, 2016; Yildirim & Akamca, 2017).

It is hard to say which Nature School arrived first, in the early 60’s the idea of fully outdoor Nature Schools was happening in some communities. In the early 2000’s, on the heels of Louv’s coining of NDD, Nature Schools began to gather more steam and began popping up throughout the country. This started a movement that now spans across almost all 50 states, with over 261 schools registered in the U.S. (NAAEE, 2017). It seems that similarly to the start of
European Nature Schools in the 1900’s, U.S. Nature Schools have been reactive to the decline in developmental skills among children in the U.S. (Knight, 2013). Correlating directly to current research in which authors cite time spent in nature as a way to increase mental and physical health as well as to promote positive youth development among children (Fjortoft, 2004; Louv, 2008; McCurdy, et al., 2010). In the next section, I will discuss how the current literature and the history of Nature Schools combine to form the three pillars of the theoretical framework that Nature Schools embody.

**Theoretical Framework – Three Pillars of Nature Schools**


1. Learning is a recurring, long-term process that takes place regularly in nature
2. Learning is sensory, experiential, and kinesthetic
3. Learning happens in a democratic and holistic nature

Among the many characteristics that make up Nature Schools across the country, these three are essential and act as umbrellas for other characteristics to fall under, enabling Nature School to run effectively.

**Recurring, Long-Term Process within Nature.** Similar to traditional schools, Nature Schools take place over time. They are not camps; therefore, they do not take place as short-term sessions (3-4 week intervals), but rather these schools take place over semester long sessions (typically 4.5 months, total of 9 months) as would a traditional school schedule (Bentsen, et al., 2010; Knight, 2013; Lerstrup & Refshauge, 2016). Knight (2013) states that “most experienced Forest School leaders recommend blocks of no less than ten weeks, particularly if this is going to
be the children’s only chance to experience Forest School” (page 19). Within the schools a schedule is maintained allowing for structure surrounding the schools sessions. This schedule allows students to build relationships with their peers and instructors gaining skills such as cooperation, self-esteem, and teamwork, among many others (Gray, 2011; Swarbrick, et al., 2004; Louv, 2008; Yildirim & Akamca, 2017). In fact, Knight also states that “children who are given longer opportunities to participate in Forest School sessions exhibit play that is progressively deeper and more meaningful, and the benefits can be felt when they are back in their usual environments” (page 19). Additionally, since Nature Schools run on a long-term schedule, students have the opportunity to experience the outdoors and learn in all-weather scenarios. Nature Schools see this as a positive aspect of learning in the outdoors as it shows students the importance of preparation, helps to build their immune system and allows students a chance to learn in a variety of settings (Knight, 2013).

It is also key for Nature Schools to take place in spaces that are not man-made. That is, much of their time learning is spent in a natural setting that has not been produced by humans (O’Brien & Murray, 2007; Bentsen, et al., 2010; Ridgers, et al., 2012; Knight, 2013). This allows students many opportunities to engage in hands-on learning with the world around them (Ridgers, et al., 2012). Ridgers, et al. (2012), notes that this type of learning “allows children to understand the world around them and to encounter and solve real problems” (p. 50) that they might not encounter in a traditional classroom setting. Additionally, O’Brien and Murray (2007) cite research that has shown “that children who play in natural environments undertake more creative, diverse, and imaginative play; which is seen as an important element in children’s development (p. 250).
Sensory, Experiential, Kinesthetic. The Center for Disease Control states that at three years old (the age when many Nature Schools allow students to enter) children should be able to climb and run, understand how to follow simple instructions, play imaginatively, and exhibit the use of some fine-motor skills (Center for Disease Control, Milestone Checklist). However, according to Louv (2008), many children are not exhibiting these behaviors. In addition, Peter Gray (2011) discusses the changes to the traditional U.S. school systems since the 1950’s. He cites a rise in hours students spend in school, rise in homework given, and decline in unstructured time outdoors as reason for a decline in developmental characteristics, specifically mentioning social-emotional characteristics.

In retrospect, students who are spending a majority of their time outdoors are gaining many key characteristics that are needed for healthy child development. In fact, McCurdy et al. (2010) states that “outdoor activity in natural environments may have the potential to improve children’s mental health and physical well-being” (p. 102). Current studies on Nature Schools show students gaining the same skills that both Louv and Gray argue kids are losing and are necessary for positive development. Skills such as: self-esteem, confidence, cognitive, social-emotional, physical-motor, observational, and creative thinking (Grahn, 1996; Swarbrick, et al., 2004; Fjortoft, 2004; Louv, 2008; Gray, 2011; Yildirim & Akamca, 2017).

Within Nature Schools students are given the opportunity to learn through hands-on activities, explore and experience the nature around them, and take risks (Grahn, 1996; Ridgers et al., 2012; Knight, 2013; Lerstrup & Refshauge, 2016). For instance, Lerstrup and Refshauge (2016) conducted a study in order to define the characteristics of forest sites used in Danish forest preschools. Through observation and interviews with students attending the school researchers uncovered the features and activities that were most valued by the students. Among
the top features of the schools as noted by all staff members were “features appropriate for climbing, balancing and swinging such as climbing trees, fallen trees, ditches and swings” (p. 392). These activities were also notated by students as their favorites and are activities and terrains which are necessary in developing children’s skills. Nature School instructors utilize the natural setting that is their classroom to engage students in lessons that have them experiencing all senses as well as working on their fine and gross motor skills. Students at Nature Schools are constantly engaged in their learning.

**Democratic and Holistic.** Students engaging in their own learning is the third key factor among Nature Schools in the U.S. Students are taught in a democratic and holistic nature. In a way that provides students the opportunity to lead and take part in how and what they are learning. This democratic style of teaching assists students in fostering a sense of independence, teamwork, curiosity, and problem solving (Hein, 1991; O’Brien & Murray, 2007).

In their 2007 study, O’Brien and Murray evaluated the effects that two Nature Schools had on children. Over an eight-month period, researchers were able to track changes in the children attending the Nature Schools and uncovered positive impacts consistent with current research, such as impacts to students’ confidence, social skills, language and communication, and motivation. Through their observation O’Brien and Murray found that constructivist theory of learning applies directly to the way Nature Schools function. Particularly through a theme of knowledge and understanding, they saw that instructors at Nature Schools allowed students to become familiar with their surroundings, in doing so, students displayed curiosity in what was around them and begin to question more. Instructors were then seen adapting “future sessions based on their observations of the child week by week as to what excites their curiosity and desire to learn” (p. 259). This allowed for students to be active, engaged participants in their
education. O’Brien and Murray state that “knowledge is developed through the expertise of the practitioner who is there to guide and explain, but learning also comes from child-initiated exploration” (p. 259).

**Building and Sustaining an Independent School**

In addition to following the theoretical framework of what a Nature School is in terms of the essence, the school is also a business. Nature Schools, like any independent school need a plan to follow and guidelines to adhere to in order to grow from an idea into a valuable, sustainable school for children to attend for years to come.

David Catlin (2017) defines a business model as “a document that spells out the goals and objectives of an enterprise, assesses its prospects for success, and describes the strategies for achieving it” (p. 1). This type of plan is key for all new and existing Nature Schools. Through this plan schools lay out key factors on who they are, what their goals are, what their key needs are, and how they plan to accomplish them. Additionally, the plan can act as a way for schools to position themselves to potential donors who may assist with finances.

A Nature School is more than just a place that fosters the development of children, it is also a small business. Nature School leaders should have this mind set when starting the process of creating their business plan. Mel Scott and Richard Bruce (1987) define five stages for growth among small businesses: inception, survival, growth, expansion, and maturity. These stages transfer to the business of a Nature School as well.

Inception is the fundamental stage in which owners define their mission and philosophy as well as outlining their priorities in relation to both mission and philosophy. Inception can seem like a daunting task as it requires school executives to define every aspect of who they are, what they hope to accomplish, and how they plan to accomplish this. Through this phase school
executives should create and write out their business plan. The U.S. Small Business Administration and experts in the field (Scott & Bruce, 1987; Manuszak, 2008; Catlin, 2017) suggest the following be included to create a successful business plan for independent schools:

- Clearly defined goals, mission, and priorities
- Community Analysis defining who the market population is both for students and for potential partners
- Resources needed – from the actual site and staffing needs to transportation plans
- Legal Structure of running a school
- Financial plan – costs to be incurred and plan to cover costs
- Defining program structure and services to be provided
- Operational procedures
- Marketing plan (i.e. how to fill their class roster)
- Timeline for delivery

By taking these key factors into consideration and creating a business plan schools are able to move through the inception phase and into survival. According to Scott and Bruce (1987), once a business reaches this stage they are a “workable business entity”. As schools begin to grow they lean less on their personal finances to fund the operation and gather more support through outside partners. From here they move into the growth phase which schools could stay in for a substantial amount of time as they become profitable and funnel the money back into the business to promote growth and structure. As schools become more systematized they are entering the expansion phase. Schools here would typically have a solid presence among the community that they are in and consistently have waiting lists for their classes. In some cases, schools might take time in this phase to experiment and grow their course offerings. The final
stage, maturity is reached when schools generate a profit. Up to this point schools are most likely putting all of the money they are making back into the company in order to pay salaries, rent, supplies, etc. Maturity is a point where the school is stable, from here they might start to think about expanding and opening another school which would bring them full circle back to phase one, inception.

What all executives should remember is that this process takes time. They may be in the survival stage longer than anticipated due to unforeseen problems that could arise in terms of funding, enrollment, legal problems, etc. (Scott & Bruce, 1987). Although this can be a lengthy process, research shows that it is essential to take the time to complete a comprehensive business plan in the inception phase in order to one day reach maturity and success as an independent school.

**Methodology**

I used a multi-phase, emergent framework through a mixed-methods approach to compile data on how Nature Schools across the country function. A mixed-methods approach “incorporates elements of both qualitative and quantitative approaches” (Creswell, 2013, p. 3). This research design provided me with the opportunity to integrate “the two forms of data, and [use] distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the combination of qualitative and quantitative approaches provides a more complete understanding of a research problem than either approach alone” (Creswell, 2013, p. 4). I conducted a national survey as well as phone interviews to gather a complete understanding of Nature Schools in the United States in order to enhance the field.
Survey

Creswell (2013) notes that survey research provides a description “of trends, attitudes, or opinions of a population by studying a sample of that population” (p. 13). Surveys have allowed me to sample a population across the U.S. and generalize about the Nature School population based on the theoretical framework which defines the key characteristics of Nature Schools. The survey was administered as the first phase of my multi-phase approach. I administered my surveys through the Natural Start Alliance [See Appendix A for a copy of the initial email inquiry]. The Natural Start Alliance is a group that creates a network for Nature Schools to connect with each other and provides tools for education, growth and success.

I defined 50 survey questions (appendix B) based on my theoretical framework, pre-existing literature, and existing national data on Nature Schools in the U.S. The demographic question set is grounded in national research on U.S. Nature Schools completed by the North American Association for Environmental Education (NAAEE), in conjunction with the Natural Start Alliance in 2017. My questions were selected based on the data they presented and an attempt to collect demographical, curriculum, and business related data that was missing from their research. The curriculum question set is grounded in the theoretical framework that makes up Nature Schools as cited above in my literature review. The questions were selected to delve into those three themes and how they are represented through the curriculum presented in Nature Schools. The business model question set is grounded in Mel Scott and Richard Bruce’s (1987) theories on the five stages of growth that small businesses encounter, altered to represent Nature Schools as an independent business.

To distribute the surveys, the Natural Start Alliance sent my survey through an email to a google group of 140 Nature Pre-Schools and included my survey link in their electronic
newsletter. I collected 31 survey responses, 22 of which were valid responses. My response rate was about 22% based on 31 survey responses out of 140 known Nature School recipients. The survey was intended to be completed by directors/principals from each Nature School; however, I did not include a question on the survey for the responder to indicate their title at their school.

Following the collection of survey data I completed data clean up and analysis. To analyze the data I looked at the averages, found the standard deviations, completed a correlations analysis and used cross tabs for many sets of data collected.

**Phone Interview**

For the second phase of my research I conducted phone interviews with self-selected Nature Schools who completed the survey. I chose phone-interviews as my respondents were located all across the U.S. and it was not feasible for me to conduct in person interview. Phone interviews provided just as rich data as an in person interview would. Moira Cachia and Lynne Millward (2011) found in their study on the telephone as a medium for interviews that “the telephone medium and interview modality are complementary. Also, the interview transcripts provide rich contextual data” (p. 265). This was true in my case, interviewees seemed comfortable to answer all question posed to them and engage in unstructured conversation on the topics posed as well.

To select interviewees, I gave respondents the option to self-select themselves as interested in participating in a follow-up interview at the end of the initial survey they completed. Out of 22 valid survey responses, 14 respondents elected to participate in an interview. I emailed each of the respondents with a consent form and link to sign up for a 25 to 45 minutes phone interview. Out of the 14 interview candidates, nine were emailed with a link to sign up for a phone interview, six signed up for interviews, three did not respond. Five interview candidates
elected to interview too late in the study and were not offered an interview but were told that they would be contacted if further information was needed.

Semi-structured interviews were conducted and recorded. I followed the same interview protocol with each interviewee, using a prompt during the interviews (Appendix C). The interview prompt is grounded in the literature referenced throughout the literature review for all topics. Each interview lasted between 25 and 45 minute. Following the interviews, interviewees were emailed a thank you and note that they would be contacted should I need further information. Interviews ranged from Executive Directors to Lead Teachers working at the schools. All interviewees were female. Each interview included questions pertaining to the school’s history, curriculum development, policies, and business model.

Once interviews were completed, I used Google’s talk-to-text function to transcribe the interview, then listened again to each interview to ensure transcriptions were accurate to the recorded interview. After interviews were transcribed I read through each multiple times and went through a process of coding by sections and phrases, and then went back through and clumped my initial coding into the themes that are presented in the findings section.

**Limitations, Anonymity, Positionality**

I encountered the following limitations while conducting my research: time, range of schools surveyed, number of interviews, and inability to send the survey directly to the Directors of schools. Time was a major limitation as I only had about 4 months to complete data collection, analysis, and writing. Due to this lack of time, I was only able to complete six interviews out of the 14 survey respondents who had initially self-select to participate in an interview. Additionally, the newsletter that was sent out with my survey link was sent to open 4,000 people, it is safe to assume not all of the newsletter recipients were Nature Schools by
definition based on the fact that there are 260 reported Nature Schools in the U.S. Therefore, I was only able to directly reach 140 known Nature Schools through the google group email.

I was able to ensure anonymity by using Qualtrics as a platform for my survey collection in which respondents were only asked for personal information such as their name if they self-selected to participate in a phone interview. This information was then kept secure through password protection. In addition, all quotes used throughout the data was removed of any identifiable information.

While it was not my intention to allow my interest in Nature Schools to affect my research, I did proceed with this study knowing that I have a positive bias towards the schools. There is a chance that my belief that nature based education is integral in youths learning and development impacted the lens in which I analyzed the data.

Findings

The findings from surveys and interviews are outlined below. These findings give an understanding of the themes and information collected as well as a broad overview of Nature Schools.

Survey Findings

Out of 31 responses to the survey, 22 were valid. Figure 1 shows the demographic data that was collected in the survey. Of the schools surveyed, the average years in operation is 14.4 with a standard deviation of 17.2. The average length of a course is 9 months (SD 2). 41% of schools reported having 0-40 students in attendance, 36% reported 81+. The average number of full-time employees is 4.5 (SD 6.8) and part-time employees is 5.5 (SD 5.8). Of the families attending the Nature Schools that responded, 68% reportedly have an income of $75,000+, 23% have $40,000-$74,999. 64% of the schools responded that they do offer some form of financial
aid. Figure 2 gives a breakdown of tuition fees and financial aid offered at the schools who responded.

**Figure 1**

<table>
<thead>
<tr>
<th>TYPICAL INCOME</th>
<th>Number of students</th>
<th>Years in operation</th>
<th># of Full-time employees</th>
<th># of Full-time employees</th>
<th>Length of typical term</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0-$39,999</td>
<td>9%</td>
<td>23%</td>
<td>41%</td>
<td>36%</td>
<td>14.4</td>
</tr>
<tr>
<td>$40,000-$74,999</td>
<td>68%</td>
<td>23%</td>
<td>41%</td>
<td>36%</td>
<td>14.4</td>
</tr>
<tr>
<td>$75,000+</td>
<td>36%</td>
<td>23%</td>
<td>41%</td>
<td>36%</td>
<td>14.4</td>
</tr>
</tbody>
</table>

**Figure 2**

<table>
<thead>
<tr>
<th>Tuition &amp; Fees</th>
<th>Financial Aid</th>
<th>Typical Financial Aid Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>$500/month private and $500/month Headstart</td>
<td>Yes</td>
<td>Headstart $500/month per child</td>
</tr>
<tr>
<td>7500</td>
<td>Yes</td>
<td>1000</td>
</tr>
<tr>
<td>varies depending on schedule; 5-day tuition is $763 for toddlers and $692 for preschoolers</td>
<td>Yes</td>
<td>50% reduction in tuition</td>
</tr>
<tr>
<td>3-day $1900 2-day $1600</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>2880.00 to 4512.00 depending on number of days and hours</td>
<td>Yes</td>
<td>full tuition for 2 years plus an allowance for gear</td>
</tr>
<tr>
<td>$34 week/part time half days; $86/week full time half-days</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>$325 for two sessions per week</td>
<td>Yes</td>
<td>full scholarship support</td>
</tr>
<tr>
<td>$150 per 5-class session</td>
<td>Yes</td>
<td>100</td>
</tr>
<tr>
<td>4000</td>
<td>Yes</td>
<td>0.2</td>
</tr>
<tr>
<td>2 day tuition= $260 per month, 3 day tuition= $360 per month</td>
<td>Yes</td>
<td>50% off tuition</td>
</tr>
<tr>
<td>1,000</td>
<td>No</td>
<td>N/A</td>
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<tr>
<td>varies from $3015-$5625 per year</td>
<td>Yes</td>
<td>45%-100%</td>
</tr>
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<td>$35 per 2 mornings per week, $435 per 3 mornings per week per month</td>
<td>Yes</td>
<td>40% of tuition</td>
</tr>
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<td>$3600 for 2 half days and $5400 for 3 half days</td>
<td>Yes</td>
<td>0.25</td>
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<td>$35 per month</td>
<td>No</td>
<td>N/A</td>
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<td>3000</td>
<td>Yes</td>
<td>0.25</td>
</tr>
<tr>
<td>We offer multiple tuition rates: full tuition, scholarship &amp; financial assistance. &amp; 100% city funding. Monthly tuition ranges from $0 to $600</td>
<td>Yes</td>
<td>In-house financial assistance &amp; scholarships, city-funded 100% tuition coverage.</td>
</tr>
<tr>
<td>3-day option $3,500, 2-day option $2,475</td>
<td>No</td>
<td>We will be offering 1-2 full scholarships next year, but this is a new endeavor</td>
</tr>
<tr>
<td>$786 4 hrs/5 Days, 468 4 hrs/3 days, $330 4 hrs, 2 days</td>
<td>Yes</td>
<td>10-80%</td>
</tr>
<tr>
<td>$9100</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>We operate 3 programs: 5 day - 10 Students at $440 per month, 3 day - 10 students at $225 per month, 2 day - 4 students at $190 per month.</td>
<td>No</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Figure 3 depicts the data collected on schools curriculums offered through their lessons. 95% of schools responded that they hold lessons outdoors all of the time in clear weather, and all or most of the time in inclement weather. Over 90% of schools offer hands-on lessons and risk-taking activities within their curriculum. 55% of schools never use technology and 45% use technology some of the time. All schools who responded always or often include free play in their lessons, 81% always or often work in teams, and 82% always or often offer solo work. Among their lessons, schools often or sometimes offer lessons in literacy 59% of the time, math 64% of the time, and science is always or often offered 77% of the time. Over 80% of schools note that their curriculum enhances students’ self-esteem, confidence and motivation, fine motor skills, gross motor skills, social skills and language and communication.

Figure 3

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All of The Time</td>
<td>95%</td>
<td>59%</td>
<td>91%</td>
<td>95%</td>
<td>41%</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>Most of The Time</td>
<td>5%</td>
<td>88%</td>
<td>0%</td>
<td>6%</td>
<td>0%</td>
<td>0%</td>
<td>23%</td>
</tr>
<tr>
<td>Some of The Time</td>
<td>0%</td>
<td>5%</td>
<td>33%</td>
<td>9%</td>
<td>0%</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>Never</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Always</td>
<td>86%</td>
<td>45%</td>
<td>55%</td>
<td>23%</td>
<td>18%</td>
<td>36%</td>
<td>36%</td>
</tr>
<tr>
<td>Often</td>
<td>14%</td>
<td>36%</td>
<td>27%</td>
<td>27%</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>0%</td>
<td>18%</td>
<td>18%</td>
<td>33%</td>
<td>23%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Never</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>18%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Curriculum Enhances:</td>
<td>Self-Esteem</td>
<td>Confidence and Motivation</td>
<td>Fine Motor Skills</td>
<td>Gross Motor Skills</td>
<td>Concentration</td>
<td>Social Skills</td>
<td>Language &amp; Communication</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>100%</td>
<td>100%</td>
<td>86%</td>
<td>100%</td>
<td>75%</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td>Somewhat Agree</td>
<td>0%</td>
<td>0%</td>
<td>14%</td>
<td>0%</td>
<td>27%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Somewhat Disagree</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Inclement weather is defined as rain, snow, light wind, mild-cold temperatures etc.
**Extreme weather is defined as high winds, extreme temperatures, lighting/thunder storms etc.
***Risk-taking activities is defined as jumping, climbing, balancing etc.
****Tools are defined as knives, working with fire etc.

Figure 4 shows the results of the business focused section of the survey. Among the 22 schools who responded 41% reported themselves in the expansion phase of business, 32% in the growth stage, 18% in maturity, and 9% in survival. No schools reported being in the inception phase of business (see appendix D for definitions of phases). Of the schools surveyed, all have an explicit mission, 55% have a governing board, 68% have a business plan, 41% rely on parents as
the main form of fundraising, 77% have strong community partnerships, 91% have short term goals, and 68% have long term goals. Figure 5 shows the number of schools in each stage of business, as you can see growth and expansion are where the majority of schools live. Figure 6 depicts the average years a school has been in operation for each stage of business. On average, schools are in year 5 at the growth stage, year 18 at expansion, and in year 32.5 reach maturity. Figures 7 and 8 compare the average number of years a school has been in business to the average number of full-time employees and the number of schools who rely on parents as their main form of fundraising.

<table>
<thead>
<tr>
<th>Stage Of Business</th>
<th>% Of Schools In Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inception</td>
<td>0%</td>
</tr>
<tr>
<td>Survival</td>
<td>9%</td>
</tr>
<tr>
<td>Growth</td>
<td>32%</td>
</tr>
<tr>
<td>Expansion</td>
<td>41%</td>
</tr>
<tr>
<td>Maturity</td>
<td>18%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governing Board</th>
<th>Business Plan</th>
<th>Parents = Main Form of Fundraising</th>
<th>Strong Community Partnerships</th>
<th>Explicit Mission</th>
<th>Short Term Goals</th>
<th>Long Term Goals</th>
<th>Financial Aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>55%</td>
<td>68%</td>
<td>41%</td>
<td>77%</td>
<td>100%</td>
<td>91%</td>
<td>68%</td>
</tr>
<tr>
<td>NO</td>
<td>45%</td>
<td>32%</td>
<td>59%</td>
<td>23%</td>
<td>9%</td>
<td>32%</td>
<td>36%</td>
</tr>
</tbody>
</table>
Open-Ended Responses. Respondents had multiple opportunities to provide qualitative feedback on the answers in regards to: curriculum, lessons, business characteristics and phase of business. Key themes addressed in this section are in line with the themes you will read about in
the interview findings section. When asked to respond to a question about their curriculum, a majority of schools responded that their curriculum is emergent and child-led. “We are place-based, emergent & child driven, and connected to seasonal changes in our natural environment,” said one of the schools. This was a key theme throughout the responses in this section, “We are nature and project based, and all of the above occur naturally as students collaborate.”

In addition to information on the curriculum, a few schools noted the benefits that students gain from their school’s curriculum, “Parents often tell me that their children have gained lots of confidence from attending preschool here.” Respondents also noted that students gained skills not measured through the survey, such as independence and grit, “Children learn a great deal of independence and grit.”

When afforded the opportunity to expand on their business characteristics, schools largely noted being owned by larger institutions/non-profits, “We are part of a larger institution…a nature center. We do not fulfill these items on our own but as part of the nature center.” The survey ended with respondents selecting the phase of business which their school falls into. Following this section, many schools commented on the rapid growth of their program, “Our school is opening in the fall but we have already has our registration and both classes are full with wait lists” (Survival Stage).” Schools also noted that they are looking to expand and grow their programming, “Nature Schools in general are experiencing rapid growth in our area, so our next steps are figuring out our place within the nature preschool community” (Expansion Stage).

**Interview Findings**

Three overarching themes were uncovered through 6 interviews with those currently working in Nature Schools:
1. The power of an emergent curriculum

2. Value in the commitment, community, exclusivity, and curriculum of Nature Schools

3. Challenges within Nature Schools as a business

**The Power of an Emergent Curriculum.** When curriculum was discussed, there was a common dialogue among all interviewees of the use of an emergent curriculum. Through interviews this can be defined as a curriculum that is student led and draws primarily on the season, location, and history of each particular school. One interviewee notes; “I think fun learning is so important, discovery-based learning, children learning things through their own senses you know not a lot of direct instruction, definitely you know no flashcards and worksheets so it just kind of started with that seasonal flow of things we are experiencing in the environment.”

In some cases, schools had to select a statewide curriculum in order to receive scholarship funding. The majority of schools who encountered this chose a creative curriculum as it is less structured and offers the ability for schools to allow students to lead what happens within the lesson units. “We chose a creative curriculum because it was the smallest step to take away from what was already going on in the school because it had units of study and so it….does allow you, there are rules that say you can develop your own units, our units to go with our property.”

Many schools also take the history of the founding of the school into account. For instance, one school was founded on bird watching, so they always have a unit on bird watching and migration in order to stick to the routes of the school’s founder, “we take our students bird banding at the Nature Center with our researchers because birds are what the Nature Center started around and it is culturally important to the organization.”
Throughout the interviews there was much language that touched upon the power that this emergent, creative, student-led curriculum has on the students themselves. Students were seen to be more creative and engaged in their own learning. Interviewees mentioned that the days they were not able to spend outside – therefore days with more structure – there were notable changes in the students behaviors; “on weeks when it’s been raining heavy all week or it is super cold outside and we have limited time outside we definitely see a difference in our kids and so you know behaviors are a little bit tougher they just aren’t getting those opportunities to explore and be outside which kids absolutely need.”

Additionally, interviewees saw positive health benefits to the outdoor curriculum, especially this past flu season, “Our own health is better…this year in our community schools were closing for illness, there was one week where the public schools all around us were closed because so many kids had the flu and our school attendance we were 96% that week and none of our staff had been sick, nobody’s called in sick all year and it can only be explained because of all the time we spend outside.”

**Value in the Commitment, Community, Exclusivity, and Curriculum of Nature Schools.** Throughout the conversations I had with interviewees it is clear that there is a sense of value in Nature schools. In particular, value is seen in the school’s commitment, community, curriculum, and the exclusivity surrounding them. The commitment that both parents and educators show is clear based on what interviewees said. For instance, multiple interviewees noted that parents often drove up to an hour in order for their children to attend the Nature School, “we have families that are driving an hour…you know we have somebody who drove an hour and a half every day so we have lots of folks in the city because the school system is not as
great. The public schools are not where parents want them to be...so we have many city dwellers but we also have people from all around different counties.”

In addition to the parent’s commitment to get their children to Nature Schools the educators themselves see the value in the time that they dedicate to the students. One interviewee noted that “it’s very demanding on adults to do that [teach outside] you know there’s a lot that they’re trying to provide for the child but they also have to take into account their own comfort and cold, you know they might have a lot of intention for the day, but it just turns out to be how to stay warm and have fun on a cold day, finding the right mix of teaching staff is key.” The educators hired show a clear dedication and commitment to the mission of their school by coming in each day no matter the weather.

Interviewees also showed an air of exclusivity throughout the dialogue. They mentioned things like consistently having a waitlist for their program and only needing to market through word of mouth in order to recruit students. One interviewee even had to switch the way they enroll students as it was causing such chaos among the parents, “We don’t have enough space for the kids that want to come and so we even switched to an online enrollment because parents were so frenzied we had people racing down the path [to sign up].”

Through the interviews a sense of community came to light within the Nature Schools. Interviewees consistently mentioned that the families attended loved to stay in touch and keep connected to the school. One school is planning to start an alumni event due to this demand, “we’re going to start an alumni event in the summer because we’re getting families who age out but they still want to stay in touch so we’re going to do a picnic each summer and we also do hikes and creek exploration that families can join us on.”
There is also a sense of value surrounding the curriculum presented, “My parents beg me every year – can you please extend the program….they’re also growing and seeing this influx in people who are frustrated with our factory-style education public education system they want and are craving something different.” Educators are seeing a backlash to the technology push and mentioned that parents are realizing that “it’s [focus on technology] actually doing our children a disservice and we want to get back to what learning really looks like for a child.” Interviewees made it clear that this learning come in the form of Nature Schools.

**Challenges within Nature Schools as a Business.** Although the overwhelming response during interviews was positive, there were challenges that interviewees noted in regards to running and maintaining a nature school. In particular; funding, space, and lack of control were noted the most often.

Interviewees consistently brought up funding as a challenge they face across the board. Not only does this affect the money they have to spend on students but it also affects the quality of teachers they are able to hire, “you have to make it profitable enough to pay for quality teachers…I think there’s enough people in education who are disgruntled with what they see who would make the jump is they knew [about Nature Schools], well I shouldn’t say that because they would be giving up their pension and that’s huge, that’s a really huge hurdle to overcome but if we had something that was comparable I know they would make the jump in a heartbeat.” Interviewees also noted that they often worry that their employees will leave to take full-time jobs since they are not able to offer that to their educators, “finding people who are willing to stay part-time is the key; the two people I did lose, one of them just went to a different department here but both got full-time jobs.”
Additionally, although schools are growing rapidly they lack the space, and without funding they are unable to expand, “we’re limited on space, we have one building owned by the school and the other is a lease, so the challenge is the area is growing really rapidly so you know ensuring the future of that space is something that’s kind of always on our mind.” The inability to expand on their space is two-fold. On one hand, funding is needed to secure space, on the other some schools do not have control over the decision to expand. One interviewee noted that although they are interested in expanding, they “can’t actually physically fit another class in there so at the movement my program is what it is, and I have not heard that the board is interested in growing that program any further.”

Nature Schools are a niche school. They are a-typical, but on the rise. Due to this, there are no guidelines on licensing and accreditation specifically for Nature Schools. Many interviewees noted this as a challenge that they face. Schools often had trouble getting licensed under the current rules and regulations; “our dilemma is just like regulations because we do things that are not in the norm you know, I had to get exemptions for things. For instance, I had to get an exemption because our playground isn’t fenced…We had to get an exemption to not have a stove [due to outdoor classroom]” [in regards to Human and Health Services regulations]. In order to be licensed or recognized at all, schools need a physical space to call their home base, one interviewee noted, “one of our hurdles or challenges is that we don’t …we’re not licensed, we’re not accredited, we don’t fit anybody’s mold so people know about us in the department of early childhood education but they can’t license us because there’s no building, its literally just a parking lot and that’s it so there’s nothing to license, so we’re not accredited, we’re not licensed but we’re not like rouge we’re kind of just our own thing and no one knows what to with us.”
Discussion

The research presented in this capstone show both clear challenges and tensions that Nature Schools face as well as the many positive attributes of Nature Schools and high value placed on emergent nature education. Nature Schools are facing tension surrounding the exclusivity of the schools, which is related to a lack of funding, space, and control.

The exclusivity of schools is seen throughout the research, surveyed schools noted that their families’ average income is $75,000+. However, when compared to the average income in the states who responded to the surveys – $58,191 – this is quite high. This along with interviewee statements that their program is primarily marketed through word of mouth paints an image of what the current market for Nature Schools looks like, which is wealthy communities in the states. One would assume, that because schools are often located in wealthier areas they stand on solid ground where funding is concerned. However, this is not the case, schools largely agree that funding is a major concern. The need for funding is on par with the stages of business as described by Scott and Bruce (1987) that the majority of schools reported; growth and expansion. As figures 6-8 showed, schools are primarily run on parent funding until they reach maturity. However, this is not a sustainable form of funding. It does not allow schools the opportunity to increase their profits enough to expand their space or employee numbers in order to truly expand.

These stages of development can be used as a guide for Nature School professionals to track and monitor trends in the field. Hopefully gaining insight into schools level of growth over the years, funding patterns, and expansion of employees ultimately leading to the expansion and growth of schools. Funding patterns will be particularly important to professionals looking to grow their program. It is interesting that schools in expansion rely more on parent funding than schools in the growth stage. It would be beneficial for future research to take a deeper dive into schools
who report themselves in the growth and expansion phase comparing the funding opportunities and needs of these schools. It would be enlightening to see why schools in the growth stage rely less on parents as their main form of fundraising than schools in expansion.

Not only is funding an important aspect of a school's ability to traverse the various stages of business, but schools also need to be able to increase their student population, the number of employees they have on staff, and the size of their indoor space. As we saw in figure 7, schools do seem to increase the number of full-time staff as they move from one stage to the next which is a positive sign. However, with an increase in staff comes a need for a larger space. Even though 77% of schools reported having an indoor home base, all interviewees mentioned a need for a larger space. Additionally, schools are unable to expand into recognized entities with the state due to a lack of physical space that matches the regulations set forth by the Department of Education. Increasing the student base follows the increase in employees, space and funding – it seems you cannot have one without the other.

Apart from the challenges that Nature Schools are facing, they are all consistently offering a truly nature based education as previously described in the literature and theoretical framework of Nature Schools. Educators are clearly delivering a powerful curriculum that follows the three pillars of Nature Schools – long term learning in nature; sensory, experiential and kinesthetic learning; and learning that is both democratic and holistic. Through an average of nine months in nature based education, the same length as a student in a traditional school, students are seen to have an increase in multiple key developmental characteristics: positive self-esteem, confidence and motivation, fine motor skills, gross motor skills, concentration, social skills, and lang. & communication. These are the characteristics that Richard Louv notes youth
are lacking due to NDD. Following previous literature, it is clear that nature has a positive effect on the development of youth and can result in a decrease of NDD in the future.

The question is, what does the sustainability and growth look like for the future of Nature Schools in a time when youth desperately need nature?

**Conclusion**

The research presented opens many questions for future research, in particular what the future looks like for Nature Schools. Future researchers should use this as a stepping stone to take a deeper look into the sustainability of Nature Schools. In other words, looking at schools as a business and digging into the factors that enable a school to move from one stage to the next. It would be enlightening to pinpoint the characteristics that bridge the gap between survival and growth, growth and expansion, and expansion and maturity. By completing deeper research on the growth and expansion of Nature Schools we might truly be able to provide a guide and an opportunity for new schools to become sustainable for years to come.

I would also be interested in seeing future research focus on the demographics of the families and students served through Nature Schools. It would be illuminating to understand why there is such a disparity in income levels from the schools reported, and enable researchers to offer up solution or ideas to expand the reach of Nature Schools through all families regardless of income level.

These are the questions that will bring the Nature School field to the next level. If we can truly understand how to create a sustainable, accredited Nature School, then more students would have the chance to be educated through a system clearly valued by those families who participate. I believe that it starts with educating the community as a whole, changing the perspective of nature based education and giving parents the tools to understand what a Nature
School is and why it is beneficial and important to all youth. This could be done as a grassroots campaign that highlights Nature Schools across the country offering parents the chance to learn about those that are in their area and see that financial aid is available for families who are in need. Additionally, I would suggest that Nature Schools form a better network with each other, this would allow schools to collaborate and share their ideas and curriculum. 260 schools is a drop in the bucket compared to the number of traditional schools in the U.S. Traditional schools have more opportunity for conferences, collaboration within school districts, and resources readily available. The same needs to be created for Nature Schools, I believe that there is a start within the Natural Start Alliance, however more needs to be done to connect educators and enable them to have a sounding board for their ideas.

Nature Schools absolutely have a future in the U.S. From the few schools who have been around for 35 plus years we can see that there is a chance for sustainability. However, future research needs to be conducted and published to help educate those schools who are still climbing the ladder to maturity. Additionally, leaders should take initiatives to start a Nature Schools campaign educating the greater community of the benefits and necessity of nature based education for youth in the U.S. I hope to be a part of the future of Nature Schools and see an expansion and rise in the number of these schools in the U.S.


Center for Disease Control, Milestone Checklist
https://www.cdc.gov/ncbddd/actearly/milestones


U.S. Census Bureau (2017) Quick Facts, United States.

https://www.census.gov/quickfacts/fact/table/US/PST045217

U.S. Small Business Administration. How to start a quality child care business.


Appendix:

Appendix A: Initial Email Inquiry

Nature Preschools and Forest Kindergartens Research Inquiry

Gehrdes, Emily

Tue, Dec 19, 2017 at 3:22 PM

Dear Ms. Braus, Mr. Geczi, Ms. Merrick, & Ms. Olivolo,

I am writing to ask for your organization’s help and support. I am a graduate student at Merrimack College, working on a research capstone as part of my master’s degree in Community Engagement. My research capstone – “The Road Less Traveled: An Exploratory Study on Best Practices of Nature Preschools and Forest Kindergartens in the United States” – will investigate the strengths and weaknesses of nature programs in the US through an analysis of such programs’ policies, procedures, and curriculum. Specifically, I’d like to build upon the national survey you just released in order to conduct a mixed-methods study incorporating both a national survey and a set of in-depth case studies of several programs.

I would like to ask for your assistance in gaining email access to the 261 programs that you surveyed. Would you be willing to support my study by sending out an email that contains a link to my survey? I would be happy to explain my study in more detail or a share a draft of the survey if that is of help. I am currently at the proposal stage and going through IRB approval, which is why I’d love to know whether this chance would even be possible.

Thank you in advance for considering my request. I have put below the abstract to my study and my bio, and please feel free to contact me (or my research advisor, Dr. Dan Sarofian-Butin, whom I have cc’ed) if I can provide any more information.

Respectfully,

Emily Gehrdes

ABSTRACT

In 2006, the first “Nature School” was started in the United States (U.S.). Since then, many such schools that emphasize outdoor and experiential education have slowly appeared across the country. Today there are over two hundred nature schools. Yet although a substantial amount of research has been done on nature schools, there exists no baseline or census exploring these programs’ strengths and weaknesses. This capstone research project will investigate these schools’ policies, procedures, and curriculum through a multi-phase mixed-methods research design. Specifically, a national survey will be distributed to the directors of the approximately 260 U.S. Nature Schools and such data triangulated through several in-depth program case studies. The conceptual framework and subsequent data collection and analysis is driven by two key literature strands: (a) that Nature Schools have three key characteristics in common: learning is a recurring, long-term process that takes place regularly in nature; learning is sensory, experiential, and kinesthetic; and learning happens in a democratic and holistic nature (O’Brien & Murray, 2007;
O’Brien, L. 2009; Dentsen, et al., 2010; Knight, 2013; Cree & McCree, 2014; Ridgers, et al., 2012; Michek, et al., 2015); and (b) that small businesses, such as early childhood education programs, go through five phases of growth that leaders must be aware of and be able to work through: inception, survival, growth, expansion, and maturity (Scott & Bruce, 1987). The goal of this research capstone is to advance the Nature School field by compiling key data that can serve to determine potential best practices.

BIO

Emily Gehrdes has a passion for the outdoors and a vision to bring the benefits that nature provides to youth in the Boston area. Currently, Emily is the Creative Specialist for Events & Marketing for the O’Brian Center for Career Development at Merrimack College. Prior to this position, Emily was the Customer Success Manager at Mount Auburn Club. Emily has experience in event planning, business operations, marketing, and acts as a youth mentor to students in Lawrence, MA.
B: Survey

consent

Consent to Participate in Research Study

Title of Study: The Road Less Traveled: An Exploratory Study on Nature Preschools and Forest Kindergartens in the U.S.
Investigators: Emily Gehrde, Merrimack College
IRB Number: IRB-FY17-18-105

Introduction
You are being asked to be in a research study investigating Nature School’s curriculum, policies, and procedures in order to determine potential best practices for Nature Schools in the U.S. You were selected as a possible participant because you work in a Nature School in the U.S. We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study
The purpose of the study is to advance the Nature School field by compiling key data that can serve to determine potential best practices. Ultimately, this research will be presented as a capstone research paper and may be shared with the Natural Start Alliance and participating schools.

Description of the Study Procedures
If you agree to be in this study, you will be asked to complete the following survey that will take 15-20 minutes.

Risks/Discomforts of Being in this Study
There are no reasonable foreseeable (or expected) risks. There may be unknown risks.

**Benefits of Being in the Study**
The benefits of participation are a chance to reflect on the success and challenges at your school. Additionally, I will share my findings with the Natural Start Alliance and participating schools.

**Confidentiality**
The records of this study will be kept strictly confidential. Research records will be kept in a locked file, and/or all electronic information will be coded and secured using a password protected file. We will not include any information in any report we may publish that would make it possible to identify you. All individuals and schools in my study will be de-identified, in that I will use pseudonyms and change any necessary descriptions to make sure that none of the individuals, places or schools can be identified.

**Payments or Compensation**
You will not receive the payment/reimbursement for participating in this study.

**Right to Refuse or Withdraw**
The decision to participate in this study is entirely up to you. You may refuse to take part in the study at any time without affecting your relationship with the investigators of this study, Merrimack College or any study partners. Your decision will not result in any loss or benefits to which you are otherwise entitled. You have the right not to answer any single question, as well as to withdraw completely from the interview or survey at any point during the process; additionally, you have the right to request that the interviewer not use any of your interview material.

**Right to Ask Questions and Report Concerns**
You have the right to ask questions about this research study and to have those questions answered by me before, during or after the research. If you have any further questions about the study, at any time feel free to contact me, Emily Gehrdes at gehrdese@merrimack.edu or by telephone at (978) 204-4603. You may also contact the Merrimack College faculty supervisor of this research Dr. Dan Sarofian-Butin at sarofianbutin@merrimack.edu. If you like, a summary of the results of the study will be sent to you. If you have any other concerns about your rights as a research participant that have not been answered by the investigators, you may contact the Chair of the Merrimack Institutional Review Board at (978) 837-5280 or by email at irb@merrimack.edu. If you
have any problems or concerns that occur as a result of your participation, you can report them to the Chair of the IRB at the contact information above.

**Informed Consent**
Marking yes below indicates that you have decided to volunteer as a research participant for this study, and that you have read and understood the information provided above.

Click to write the question text

☐ Yes, I agree to the consent form as stated above
☐ No, I do not agree to the consent form (By choosing this selection you are opting out of the survey)

**intro**

Thank you for agreeing to take part in this important survey as part of a research capstone for my masters degree in Community Engagement at Merrimack College. This survey will investigate the strengths and weaknesses of Nature Schools in the US. You will be asked questions regarding your programs policies, procedures, and curriculum. The goal of this research capstone is to advance the Nature School field by compiling key data that can serve to determine potential best practices.

**Block 1**

*What is your school's zip code?*


*Please estimate the typical income of families at your school*

☐ $0 - $39,999
☐ $40,000 - $74,999
○ $75,000+

*How many students attend your school?
○ 0 - 40
○ 41 - 80
○ 81+

*How many years has your school been operating?

*Total school tuition and fees

*Is financial aid available?
○ Yes
○ No

What is the typical financial aid awarded?

*Number of full-time employees
*Number of part-time employees


**Block 2**

*Does your school have an indoor home base? (indoor home base: a man-made indoor location that your students report to prior to traveling outdoors)

☐ Yes
☐ No

*How long does each term last (i.e. 10 weeks, 6 months, 1 year etc.)?


*Please check the best answer for the following questions:

<table>
<thead>
<tr>
<th>We send children out in clear weather</th>
<th>All the Time</th>
<th>Most of the Time</th>
<th>Some of the Time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>We send children out in inclement weather (i.e. rain, snow etc.)</th>
<th>All the Time</th>
<th>Most of the Time</th>
<th>Some of the Time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>We send children out in extreme weather (such as high winds, very hot or very cold temperatures)</th>
<th>All the Time</th>
<th>Most of the Time</th>
<th>Some of the Time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
*Please provide additional information that helps explain your answers:

*Based on your school’s curriculum, please respond to the following statements:

<table>
<thead>
<tr>
<th>setVisibleColumn(0)</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our curriculum fosters positive self-esteem</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Our curriculum helps students’ confidence and motivation</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Our curriculum helps students practice fine motor skills</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Our curriculum helps students practice gross motor skills</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Our curriculum helps students improve concentration</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Our curriculum helps students improve social skills</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Our curriculum helps students improve their language and communication</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
</tr>
</tbody>
</table>
*Please provide additional information that helps explain your answers:

<table>
<thead>
<tr>
<th></th>
<th>All the Time</th>
<th>Most of the time</th>
<th>Some of the Time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our school's curriculum offers hands-on lessons</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Our school's curriculum offers risk-taking activities (i.e. jumping, climbing, balancing etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Our school's curriculum offers lessons using tools (i.e. knives, working with fire, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Our school's curriculum offers the use of technology (i.e. computer, tablet, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Our school's curriculum helps students become decision makers</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
*Please provide additional information that helps explain your answers:

Block 3

*On a typical day, how often do your students:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have free play</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Work in teams</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Work solo</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have lessons in literacy (i.e. practice reading/writing, letters, simple words)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have lessons in math (i.e. numbers, counting, simple math etc.)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have lessons in science (i.e. lessons on weather, temperatures, creating fire, etc.)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
*Please provide additional information that helps explain your answers:

*Please respond to the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>We have a governing board</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We have a business plan</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Parents are our main form of fundraising</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We have strong community partnerships</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We have an explicit mission</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We have set short term (1 year) goals for the school</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>We have set long term (3+ years) goals for the school</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
*Please provide any additional information that helps explain your answers:


*Please read the following categories and pick the best answer for your school

- Inception: The school is in the initial planning phases of turning your idea into reality with main efforts hinging around creating a business plan and getting the school off the ground.

- Survival: The school has officially launched beginning to expand; the brunt of costs are covered by the owner/founder.

- Growth: The school is profitable and generating a consistent source of income; policies and procedures are in place; school is regularly accepting new students; expanding workforce; beginning to think about long-term funding.

- Expansion: The school is more systematized and routine-like; you hold a firmly-established role in the community; you are thinking of broadening your horizons with expanded offerings; you implement reporting based on all aspects of the school including academic achievement; revenue is steady however long-term funding is a must at this point.

- Maturity: The school has grown to a point where it is generating revue, gathering long-term funding, expanding services and size.

*Please provide additional information that helps explain your answers:


Block 4

Thank you for completing the survey!

If you are interested in receiving an executive summary of the findings from this study once available in the summer of 2018 please leave your email address below:


*Would you be interested in participating in a 30-60 minute follow-up interview? This phase of the research will help me gain a better understanding of your nature school. (If yes, you will be directed to a contact information page and contacted by the researcher shortly)

☐ Yes
☐ No

Thank you for agreeing to participate and/or learn more about the case study portion of this study, please complete the information below:

*Contact Name

*Contact Title

*Contact Email
C: Interview Protocol

1. Start of Interview
   a. Thank them for taking the time to interview
   b. Remind them that I am recording this and will delete following the completion of the study
   c. Let them know that I will member check all quotes I am interested in using with them before printing/publishing in my research paper

2. Interview Guide: Aim – to understand how programs made an impact and what barriers they face
   a. Start by telling me how your school got started? What did it take? What was your role?
   b. Curriculum development – process?
   c. Interesting that you find yourself in the XX phase of development, can you talk to me a little bit more about that?
   d. Could you speak on how your school is operationally maintained in terms of funding etc.?
   e. USE LANG. LIKE THIS: how do you feel, tell me more, what would you do differently

3. End of Interview
   a. Thank them for taking the time to participate, I will be in touch if I have further questions
D: Definitions of Stages of Business

1. Inception: The school is in the initial planning phases of turning your idea into reality with main efforts hinging around creating a business plan and getting the school off the ground
2. Survival: The school has officially launched beginning to expand; the brunt of costs are covered by the owner/founder
3. Growth: The school is profitable and generating a consistent source of income; policies and procedures are in place; school is regularly accepting new students; expanding workforce; beginning to think about long-term funding
4. Expansion: The school is more systematized and routine-like; you hold a firmly established role in the community; you are thinking of broadening your horizons with expanded offerings; you implement reporting based on all aspects of the school including academic achievement; revenue is steady however long-term funding is a must at this point
5. Maturity: The school has grown to a point where it is generating revue, gathering long term funding, expanding services and size