### Thesis Prospectus 2022-23

**Name:** Rhema Neas-Gass  **ID Number:** A00419161

**Email:** Rhema.Neas@gmail.com

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**Student Post-Post Edit Submission (date):** 12/27/2022

**Faculty Reader Approval (date):**

**MES Director Approval (date):**

1. **Working title of your thesis[[1]](#footnote-1).**

Environmental Education Outreach and the Effects on K-12 Grade Minds

1. **In 250 words or less, summarize the key background information needed to understand your research problem and question.**

The need for future generations to care for the land around them has held importance since time immemorial. However, looking back in time it is clear that this specific type of education is not revered, required, or often even thought about. This thesis desires to design programs through the Puget Sound Estuarium to teach methods in environmental stewardship to K-12 students, and inspire the continuation of those lessons in their own lives. Then, data will be analyzed through time to see the impacts of those lessons though interviews, surveys, and experimental research.

1. **State your research question(s).**

Can exposing K-12 students to estuary based stewardship opportunities encourage them to carry out stewardship on their own time?

 How can estuary based stewardship education impact local ecosystems?

 How are students inspired to learn about estuary based stewardship? What ways can we utilize that passion into long term sustainability effects?

1. **Situate your research problem within the relevant literature. What is the theoretical and/or practical framework of your research problem?**

**A decent amount of research has been done with regards to experiential learning in K-12 classrooms (Barney, 2005; Ballantyne,2004). Experiential learning opportunities such as museum trips, zoo trips and outdoor education trips have been found to be a valuable source of enrichment for K-12 students. They provide students with valuable kinesthetic learning experiences and allow students to form real-world connections to the content that they are learning in their classes. This is significant for students because many young learners fail to see a connection between the content in their textbooks and issues that are happening in the real world. However, less research has been done in relation to the impact that outdoor education has on young learners. Most studies that have looked into it have found it to be beneficial (Bowers, 2018). What has not been studied extensively is the relationship between outdoor education and student conservation behaviors. This study seeks to analyze the relationship between outdoor education programs that focus on conservation and the behaviors of students after they participate in those programs. This study seeks to look into the relationship between those two factors.**

Ballantyne, R. (2004). Young student’s conceptions of the marine environment and their role in the development of aquaria exhibits. GeoJournal, 60, 159–163.

Barney, E. C., Mintzes, J. J., & Yen, C.-F. (2005). Assessing knowledge, attitudes, and behavior toward charismatic megafauna: The case ofdolphins. Journal of Environmental Education, 36(2), 41–55.

 Nicole M. Ardoinhttps://orcid.org/0000-0002-3290-8211, Alison W. Bowers, Noelle Wyman Roth & Nicole Holthuis (2018) Environmental education and K-12 student outcomes: A review and analysis of research, The Journal of Environmental Education, 49:1, 1-17, DOI: 10.1080/00958964.2017.1366155

1. **Explain the significance of this research problem. Why is this research important? What are the potential contributions of your work? How might your work advance scholarship?**

This research is significant because it is one of the main avenues through which 6th-8th grade students in Thurston and Mason County are exposed to environmental science outside of their classrooms. It is vital that the lessons are engaging so that students can properly learn the basic concepts of biology and chemistry. Furthermore, this is the main avenue through which many of these young people become involved in environmental stewardship activities. Therefore, it is vital that they are meaningful and effective for students. The Puget Sound Estuarium is also reliant upon grants, and its educational programming needs to be assessed in order for it to remain secure as a non-profit.

1. **Summarize your study design[[2]](#footnote-2). If applicable, identify the key variables in your study. What is their relationship to each other? For example, which variables are you considering as independent (explanatory) and dependent (response)?**

These environmental stewardship programs will be assessed via random sampling surveys of participants. 6th-8th grade participants will be given a mixed-methods survey before and after participating in an Estuarium program. The surveys will attempt to assess if the student participants feel more inclined to participate in environmental stewardship activities after participating in an Estuarium extracurricular program. It will also feature qualitative sections where the students can give more in-depth responses with regards to stewardship and extracurricular program participation.

1. **Describe the data that will be the foundation of your thesis. Will you use existing data, or gather new data (or both)? Describe the process of acquiring or collecting data[[3]](#footnote-3).**

Earlier Estuarium surveys will inform the creation of this mixed-methods survey. It will also be informed by the needs of the Estuarium itself. Important actors such as Estuarium board members and other employees will inform the creation of the survey.

**Post-Program Survey Example Questions**

1. On a scale of 1-10, how interested are you in participating in a beach cleanup?
2. On a scale of 1-10, how interested are you in joining an environmental club at your school?
3. On a scale of 1-10, how interested are you in helping out with a school community garden?
4. Have your conservation behaviors at home changed since you participated in the Estuarium program? What do you do differently now?
5. Have you discussed environmental issues with your friends or family since participating in the program?
6. **Summarize your methods of data analysis. If applicable, discuss any specific techniques, tests, or approaches that you will use to answer your research question.**

This study will utilize a paired T-Test to match participants’ responses to the above survey questions before and after taking the above survey questions. This study will be assessed by comparing scores before and after will allow us to see if educational activities had an effect on participants opinions. It is vital that the participants remain the same in the before and after surveys. If any participants participate in one half of the survey and not the other, their responses will be eliminated from the responses. Positive results (higher participation in conservation activities after participation in the program) indicate that the educational programs are effective and negative results indicate that the programs were not effective and they will need to be re-assessed. One unfortunate aspect of all of this is that there is not enough time to do a long-term assessment of the programs. It is possible that students will not be inspired to participate in conservation immediately after doing the program, but they might be interested in it further down the road. This is the limit of every study that is limited by time constraints.

1. Address the ethical issues[[4]](#footnote-4) raised by your thesis work. Include issues such as risks to anyone involved in the research, as well as specific people or groups that might benefit from or be harmed by your thesis work, perhaps depending on your results. List any specific reviews you must complete first (e.g., Human Subjects Review or Animal Use Protocol Form).

**Since this study involves minors, all students that participate in it will have to have signed parent/guardian permission slips before they participate in the program. The permission slips will discuss the nature of the trips and some of the major topics that will be explored during the trip. If parents do not sign the form, the students will not be able to participate in the program. The content of the lessons will be able to be reviewed by the parents before the trips take place and parents will have the opportunity to offer feedback to the instructors. Furthermore, students will be given ground rules before participating in the activities.**

1. List specific research permits[[5]](#footnote-5) or permissions you need to obtain before you begin collecting data (e.g. landowner permissions, agency permits).

**We will need signed permission slips from the students, permission from the Estuarium and permission from the school in order to facilitate this trip.**

1. **Reflect on how your positionality as a researcher could affect your results and how you will account for this in the research process[[6]](#footnote-6).**

**My positionality could affect my results, as I am one of the educators in charge of not only creating the lessons, but teaching them. I will have other teachers (for example the Education Coordinator) assisting in oversight of the planning and implementation of these lessons. I will account for this by opening myself to outside feedback from my boss, other contract educators and the students that I work with.**

1. **Provide at least a rough estimate of the costs associated with conducting your research, if any.  Provide details about each budget item so that the breakdown of the final cost is clear.**

I do not believe there will be any costs associated with this survey. If there are, the Estuarium will absorb them.

1. **Provide a specific work plan and a timeline for each of the major tasks in the work plan. Be as realistic and specific as you can at this point, including the** **deadlines for Spring quarter.**

**January**

1. **Perform a needs analysis with regards to what information would be helpful for the Estuarium to gather. What does the Estuarium need to know with regards to student behavior after participation in its program?**

**February**

**2. Work on survey, finalize questions, get feedback from Education Coordinator, Puget Sound Estuarium Board and peers. Finalize lesson planning, coordination and program implementation.**

**March**

 **3. “On The Water” programming starts. The trips will occur twice a week for the entire day. The trips start by grade level and feature different school groups from Thurston and Mason county.**

**April**

**3. “On The Water” Programming Continues. The first round of post-project participation surveys will take place.**

**May**

**4. The second round of “On the Water” post-project surveys will take place.**

**June**

**5. Survey information will be analyzed and relevant changes will be implemented at the Estuarium.**

1. **Who (if anyone), beyond your MES thesis reader, will support your thesis (in or outside of Evergreen)? Be specific about who they are and in what capacity they will support your thesis. If you are working with an outside agency or expert, be specific about their expectations for your data analysis or publication of results.**

-MES Reader

-Estuarium Director

-Estuarium Board of Directors

-Co-Educators at the Puget Sound Estuarium

1. **Provide the 5 most important references you have used to identify the specific questions and context of your topic, help with issues of research design and analysis, and/or provide a basis for interpretation. Annotate these references with notes on how they relate to/will be helpful for your thesis. For any other sources cited in your prospectus in other answers, provide a complete bibliographic citation here as well.**

Ballantyne, R. (2004). Young student’s conceptions of the marine environment and their role in the development of aquaria exhibits. GeoJournal, 60, 159–163.

Barney, E. C., Mintzes, J. J., & Yen, C.-F. (2005). Assessing knowledge, attitudes, and behavior toward charismatic megafauna: The case of dolphins. Journal of Environmental Education, 36(2), 41–55.

Gough, A. (2002). Mutualism: A different agenda for environmental and science education. International Journal of Science Education, 24(11), 1201–1215.

Carleton-Hug, A., & Hug, J. W. (2010). Challenges and opportunities for evaluating environmental education programs. Evaluation and program planning, 33(2), 159-164.

Michael J. Brody & Helmut Koch (1990) An Assessment of 4th-, 8th-, and 11th-Grade Students' Knowledge Related to Marine Science and Natural Resource Issues, The Journal of Environmental Education, 21:2, 16-26, DOI: 10.1080/00958964.1990.9941927

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Ord, J. (2012). John Dewey and Experiential Learning: Developing the theory of youth work. Youth & Policy, 108(1), 55-72.

Jensen, B. B., & Schnack, K. (1997). The action competence approach in environmental education. Environmental education

1. You are not locked into this title; we want you to identify the main point or topic of your thesis. [↑](#footnote-ref-1)
2. You might discuss selection of case studies, sampling methods, experimental design, and/or specific hypotheses you will test. You should also address any specialized knowledge or skills that are necessary to complete the research. [↑](#footnote-ref-2)
3. If you are planning to use existing data, explain the specific source, contact information, arrangement with collaborating agencies, and expectations about use of data and final products of your research. If you are planning to gather new data, describe specific methods, time, place, and equipment that will be required. [↑](#footnote-ref-3)
4. If you’re not sure where to start, consult a ‘Code of Ethics’ or other similar document from an academic society in an applicable field of study. [↑](#footnote-ref-4)
5. If you are collecting ANY samples or data, even observational data, on public lands (city, county, state and/or federal) it is your responsibility to find out the permit requirements BEFORE you collect data. Conducting research with tribal members/on tribal lands will have different and additional requirements. [↑](#footnote-ref-5)
6. Your *positionality as a researcher* refers to the fact that one’s “…beliefs, values systems, and moral stances are as fundamentally present and inseparable from the research process as [one]’s physical, virtual, or metaphorical presence when facilitating, participating and/or leading the research project…” (The Weingarten Blog 2017). [↑](#footnote-ref-6)