How Masculine Gender Identity Impacts Participation in Hands-on and Wildcrafting Environmental Education Programs in Bucks County, Pennsylvania

Marissa Jacobs

Slippery Rock University

Introduction

The environment requires stewardship from all those who live there, and as such, cannot fully function and thrive if large portions of the human population do not respect it or know how to care for it. As an environmental educator, it is imperative to engage program participants in order to teach them about the natural world and the importance of caring for our planet as its stewards. As such, a lack of men participating in environmental education (EE) programming, especially in programs that incorporate hands-on wildcrafting, or foraging and harvesting wild plants for use, is concerning. By analyzing men's perceptions of creative endeavors, environmental concepts, and gender identity, this left-out population may be attracted to future EE programs that teach them about becoming the best eco-stewards as possible.

Gender & Social Theory

Throughout their lives, an adult's understanding of their own gender identity solidifies and they behave in ways that correlate with their identity. In order to explore the motives behind why certain genders do or do not engage in activities, we need to understand several gender development theories. Bussey and Bandura describe several theories by which children learn gender identity: the psychoanalytic, cognitive-development, gender-schema, biological, and sociological theories.

The Cognitive-Development Theory states that, "Children develop the stereotypical conceptions of gender from what they see and hear around them. Once they achieve gender constancy - they believe that their own gender is fixed and irreversible - they positively value their gender identity and seek to behave only in ways that are congruent with that conception." (Bussey, K., Bandura, A. 2004).

While the article mentions that individuals form and develop their own gender identity, it fails to discuss the LGBTQ+ population, and theories revolving around gender identities outside of male and female. For instance, they mention that people have certain perceptions of how the *two* genders operate (Bussey, K., Bandura, A. 2004). Society has retained certain expectations of males and females; it is now also accepting of a wider variety of gender identities including trans, asexual, bi, gay, lesbian, queer, and many more. Olsson and Gericke (2017), for example, display more modern social thinking that gender is a social construct that can influence multiple different identities.

The Social Norm Theory states that there are unwritten rules that society must follow, whether that be gender based, appearance based, income based or otherwise. People want to fit in with those around them and will behave likewise. These norms may change from one culture to another; however, patterns can be noticed after observing a group of people over time (Stern, 2018).

In order to maintain social norms, as individuals mature and experience the world around them, there is pressure for gender conformity. People have an innate desire to fit in and will feel pressure from society if their behaviors do not match the expectations of what it is to be a male or female (Lagaert, et al. 2017). Perceptions of what it may mean to be male or female may change on a cultural scale, and are influenced by actions, behaviors, cognitive understanding of the world, and emotions (Bogner & Wiseman, 2006).

Despite a desire across identities to conform to their socialized gender norms, the pressure is higher to conform for males than it is for females. Studies have shown that young boys and adolescents who do not conform are more likely to be bullied and will ultimately have

less friends, while females who do more "boyish" activities or like things that their male counterparts do are not looked down upon in such a negative way (Lagaert, et al. 2017). The pressure on the male population to behave and stay congruent with societal norms may be enough to dissuade males from participating in EE, especially in programs that focus on creative outlets.

Gender Views on Creative Endeavors

Several studies have noted that while both men and women may be taught about the arts, creative outlets, and the environment in school, women show a propensity for those topics and actively pursue them (Lagaert, et al. 2017; Boeve-de Pauw, et al. 2014; Olsson, et al. 2017; Li 2022). Arts and reading tends to have a more feminine feel while math and science have a more masculine feel (Lagaert, et al. 2017).

While this information shows the norms of what men and women have propensities for, other gender identities may overlap with what is considered to be normal behavior for a male or for a female. For example, in the LGBTQ+ population, a gay man may biologically be male and use he/him pronouns, yet have more feminine propensities for the arts, interpersonal connections, and aesthetics (Halperin, 2012).

Gender Views on Pro-Environmental Perspectives

A suggestion as to why females show a greater propensity for the environment is that, regardless of age and culture, they tend to "have a stronger ethic of care, and to be more interdependent, compassionate, nurturing, cooperative, and helpful in caregiving roles; males however, are socialized to be more independent and competitive." (Boeve-de Pauw, et al. 2014).

Females are more socially inclined to care and help others, leading to a mindset to create bonds and ties with the natural world. Studies show that women tend to be more concerned about environmental topics such as pollution and climate change, and also be more likely to take action to make personal changes and advocate for a healthier planet. However, gender identity is a social construct that depends on environments and society's perceptions, so gender norms may vary. In Egypt and India, males have expressed a higher level of concern for the planet's health and are more active decision makers for green policy (Li., et al. 2022).

Caring for the natural world, having a desire to protect it, and being good stewards of it fits in with having a strong ethic of care. While this is not to say that all males behave otherwise, for the most part, they have been socialized to express their values differently. As data is collected on how gender identity, specifically that of those identifying as male, impacts EE program attendance, it is valuable to consider the art and environmental perspectives of each gender.

Gender Views on Educational Opportunities

Overall, females tend to invest more time in the arts and other cultural activities. Studies have suggested that this may be due to the fact that females tend to be "responsible for the family's public image and for the cultural reproduction, that is, the cultural "housekeeping" within the family." (Lagaert, et al. 2017). This suggests that creative endeavors, especially ones that have an element of aesthetics or emotional connection, fall under the umbrella of cultural housekeeping.

Across the globe there is an overwhelming lack of male educators, with only 1-3% of the teaching staff being male. Norway, Denmark, and Turkiye have managed to employ the highest

percentage of male teachers at roughly 5% or slightly greater (Warin, 2017). Teaching falls under a psychological umbrella of nurturing and caring for young minds, which was stated to be inherently feminine, however this does create an issue in that boys and adolescent males lack other masculine role models to look up to that also possess a nurturing and caring mindset.

In elementary schools across the country, female teachers create bonds with their students and tend to set higher achievement expectations for female students than they do for male students. This leads young boys and adolescents to already believe that they will not do as well in formal academic settings as others, and this belief is carried with them into higher education and potential careers (Quenzel & Hurrelmann, 2013).

Beyond secondary and higher education, females tend to search out educational opportunities that will enhance their lives and their families lives more than males will. These educational opportunities can be constituted of extra-curricular activities, educational programs, plays and operas, and other culturally enhancing experiences (Lagaert, et al. 2017). These experiences may also include programming at nature and environmental education centers.

Without male role-models in the primary, secondary, and environmental education fields, many individuals identifying as males will be less likely to participate in EE programs, regardless of what those programs focus on or how they are presented.

Research Question

"How does gender identity impact participation in environmental education programming that incorporates hands-on or wildcrafting elements in Bucks County, Pennsylvania?" The research findings aim to increase the number of those identifying as masculine attending EE

programming, especially for programs that incorporate hands-on components in a gender flexible manner, as well as enhancing marketing techniques that attract a wide diversity of participants (using appropriate marketing keywords, social media, event calendars, etc…).

The variables measured will include gender, attitudes and perspectives towards and about pro-environmental feelings and creative endeavors, historical perspectives on past EE program attendance, and level of overall education received.

Methods

I will utilize the Mixed Methods Explanatory design, focusing on Participant Selection, which consists of two phases. The first phase measures quantitative data in a wide audience, then uses that data to purposefully select participants for follow up in the second phase. The second phase incorporates a qualitative collection and analysis based on the results from the first phase. The information collected in the second phase explains why the quantitative results occurred (Cresswell, 2006).

Site Selection

The Art of Ecology, a freelance environmental education organization, run by Marissa Jacobs, blends the arts and sciences with many programs teaching scientific concepts through hands-on, creative programs primarily to adults. Some of these programs include scientific illustration, terrarium and kokedama plant ecology, nature photography, and wildcrafting. The wildcrafting programs focus on foraging for botanical textile dye, culinary foraging, and herbalism. In all The Art of Ecology programs run in 2020 through 2022, fewer than 20% of the adult participants were male (Jacobs, 2022).

While The Art of Ecology travels throughout much of southeastern Pennsylvania, the focus of this study will be the geographic area of the greater Bucks County region. In this area, individuals ages 18 and over make up 79.6% of the county's population, and males or those identifying as such, make up 49% of those adults. A majority of these adults live in middle to high-income households with expendable income (US Census Bureau, 2021).

Participant Selection

In exploring how masculine gender identity influences and impacts decisions to attend EE hands-on and wildcrafting programs, increasing the attendance of male participants, and those identifying as male is my goal. Throughout the study I will survey, interview, and conduct focus groups with the male population, and those identifying as male, who are ages eighteen and older and have expressed an interest in the natural world. I will utilize names from several Bucks County local nature and environmental education center's member and program attendee database: Churchville Nature Center, Bucks County Audubon Society, Silver Lake Nature Center, and Peace Valley Nature Center.

Data Collection

By utilizing the Explanatory Design (Cresswell, 2006), I will send out quantitative surveys through email, social media, and mail, utilizing addresses from membership databases from other local EE organizations and nature centers, which target males in the Bucks County region. These surveys will provide answers about attributes such as gender, race, residential address, and level of education achieved. Respondents will provide answers of their knowledge of wildcrafting, behavior towards EE program attendance, self-guided wildcrafting, visiting

nature center, and where respondents go to find things to do in their area. I also will measure attitudes on a fixed scale, coded with numerical values.

This survey will be based on the annual Arbor Day Foundation "What You Think About Trees" questionnaire. This quantitative survey addresses perspectives, pro-environmental thoughts, and has been tested and validated (Arbor Day Foundation, 2022). This survey will also include questions from the Environmental Identity Scale (Clayton, 2003) survey. The wording will be changed to suit the needs of this research question.

Data Analysis

Upon closing the survey, the data will be coded and analyzed. The analysis will be used to develop criteria for choosing participants for follow up in the second phase. The second phase will include private, semi-structured interviews which will provide qualitative data that explains individual results. Those interested in providing further feedback, during the semi-structured interviews and focus groups after the questionnaire, will check a box on the survey, and they will be input into an excel sheet. Using a random number generator, I will select a total of 12-16 participants to be split further using that randomizer into two focus groups that will encourage greater detail and depth (Newing, 2011). By holding private interviews prior to the focus group, I can prevent the data from the focus group being skewed by the Audience Effect and Order Effect (Newing, 2011).

The answers from the semi-structured interviews and focus groups will fill out the narrative begun by the quantitative data. However, after compiling the information from the second phase, it will be necessary to compare results from both phases that might better explain trends or redefine considerations. The full analysis will avoid possible misleading statistics in the

first phase by revealing motivations and stories behind the raw data in order to fully answer the question, “Why don’t men come to my wildcrafting programs?” An expectation is to learn how to further develop EE programs to incorporate hands-on components in a gender-flexible manner. Data analysis may also enhance marketing techniques and keywords in order to attract a wider diversity of participants, including more male adults.

Budget & Timeline

Timeline

Target Date	Task
February 28, 2023	Develop quantitative survey instrument
March 1, 2023	Distribute survey for data collection
May 1, 2023	Proposed survey submission close date
May 15, 2023	Data entry
May 31, 2023	Data analysis and phase 1 draft report complete
June 1, 2023	Reach out to prospective phase 2 qualitative data interviews and focus group participants
June 30, 2023	Hold last qualitative private interview
July 10, 2023	Data entry
July 31, 2023	Focus group complete
August 15, 2023	Data entry
September 1, 2023	Data analysis and phase 2 draft report complete
November 1, 2023	Final report finished
March TBD, 2024	Present results at PAEE Conference
Spring TBD, 2024	Prepare manuscript for submission to *Journal of Environmental Education* or similar journal

Budget

Category	Proposal Request	Other Matching Funds	Total Project Cost
Wages	$8,767.00		$8,767.00
Fringe Benefits	$480.00		$480.00
Supplies	$142.93		$142.93
Operating Expenses	$781.99	$300.00	$1,081.99
Travel	$389.25		$389.25
Other			$0.00
Total	$10,561.17	$300.00	$10,861.17

Justification

The wages will be paid as intern project support for a total of 97 hours at a rate of $11.00 per hour. The intern will assist with collecting, coding, and analyzing data, as well as presenting findings at the PAEE 2024 Conference. The wages also include a stipend for myself to work a total of 110 hours at a rate of $35.00 per hour. I would be leading the research, collecting data, coding it, analyzing it, writing final reports and submitting findings to a potential journal focusing on the environmental education field. Having an intern will allow for data to be coded reliably (Newing, 2011) and the findings to be confirmable (Moon, et al., 2016).

The fringe benefits are calculated at $4.80 for every worked hour by Marissa Jacobs, which is based on the Department of Labor's fringe rates for 2022 (Wage and Hour Division, 2022). The supplies include refreshments for two focus group dates. These focus groups will include six to eight participants, myself, and my intern. The supplies also include a Zoom Professional subscription for three months, which will allow us to record the semi-structured, private interviews as well as the focus group meetings. These recordings will assist with the transcription process.

The operating expenses include 50 copies of a paper questionnaire to be handed out in-person, postage for 100 separately mailed questionnaires, a specially designated post office box for the returned mailed questionnaires, and PAEE conference admission for the intern and myself (prices based on the 2022 conference rates). Bucks County Audubon Society, in New Hope, Pennsylvania, will provide facility space in which to hold the two focus group meetings. This is an in-kind donation worth $150.00 per focus group meeting, totaling $300.

The travel expenses account for travel to and from the post office to pick up the mailed questionnaires in a timely fashion, traveling to Bucks County Audubon Society for the two separate focus group meetings, and traveling to the PAEE conference (travel time and mileage based on 2022 conference location).

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Appendix

A) Arbor Day Foundation Survey, manipulated to provide questions about pro-environment attitudes and behaviors (Arbor Day, 2022). - https://shop.arborday.org/campaign/survey?utm_source=vanity&utm_medium=print&utm_campaign=08719&utm_content=treesurvey

B) Focus Group Toolkit: Facilitator Discussion Guide, Center for Community College Student Engagement. This will be manipulated to provide focus group questions about educational experiences in the past, how they have informed decisions on what to participate in today, and roles of environmental education. - chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ccsse.org/docs/SSBTN_FG_Handouts.pdf

Background of, and general information about, participants

1. **Fill out Student Profile Sheet**. Discuss specific elements if desired to better understand characteristics of participants.
2. Introduce participants, including: a) name, b) academic goals, and c) other colleges attended, if any. Ensure that all participants are over 18 and that all are in their first academic term at this college.

B. Outcome 1: To understand what students expect from higher education

1. Why did you decide to go to college? Did anyone *urge* you to go to college? Parents? Friends? High school teachers or counselors? Anyone else?
2. Did anyone *discourage* you from considering college? If so, who was that person? What reason(s) did they give?
3. Before you decided to come to this college, how did you get information about colleges? In high school? In your job? From family? From friends? Other?
4. Why did you choose this college? Location? Cost? Academic reputation? A particular program? A family member or friend went to this college? Other?
5. At this time, do you feel supported in your decision to go to college? From family members? Friends? Others?
6. Before you came to this college, what did you expect college to be like? Where did those expectations come from? High school counselors or teachers? Employer? Friends? Family? Information you read? Other?
7. Think back to the first time you came to this campus (could be today!). You're sitting in the parking lot or getting off the bus or subway, preparing to walk into the building to register for your classes. What's going through your mind? What are you worried about? What are you excited about?
8. Based on your first impressions of this college, think to yourself and complete the sentence: ***"This college is like a _____."*** **(Give them silent time here.)** Tell us about your response.

C. Outcome 2: To understand students' earliest experiences with the college

1. Admissions Process
2. Advising and Planning
3. Financial Aid
4. Academic Experiences
5. Support Services and Other College Services

D. Outcome 3: To understand what factors students believe would help them start right in college — Advice to the college

C) Natural Lands Trust Survey, which will be manipulated to provide questions about participant environmental engagement (natlands.org).

D) Revised Environmental Identity Scale from the North American Association for Environmental Education (Clayton, 2003)

Revised Environmental Identity Scale

Please indicate the extent to which each of the following statements describes you by using the appropriate number from the scale below.

1	*2*	*3*	*4*	*5*	*6*	*7*
Not at all true of me			*neither true nor untrue*			*completely true of me*

_____ 1. I like to spend time outdoors in natural settings (such as woods, mountains, rivers, fields, local parks, lake or beach, or a leafy yard or garden)

_____ 2. I think of myself as a part of nature, not separate from it.

_____ 3. If I had enough resources such as time or money, I would spend some of them to protect the natural environment.

_____ 4. When I am upset or stressed, I can feel better by spending some time outdoors surrounded by nature.

_____ 5. I feel that I have a lot in common with wild animals.

_____ 6. Behaving responsibly toward nature -- living a sustainable lifestyle -- is important to who I am.

_____ 7. Learning about the natural world should be part of everyone's upbringing.

_____ 8. If I could choose, I would prefer to live where I can have a view of the natural environment, such as trees or fields.

_____ 9. An important part of my life would be missing if I was not able to get outside and enjoy nature from time to time.

_____ 10. I think elements of the natural world are more beautiful than any work of art.

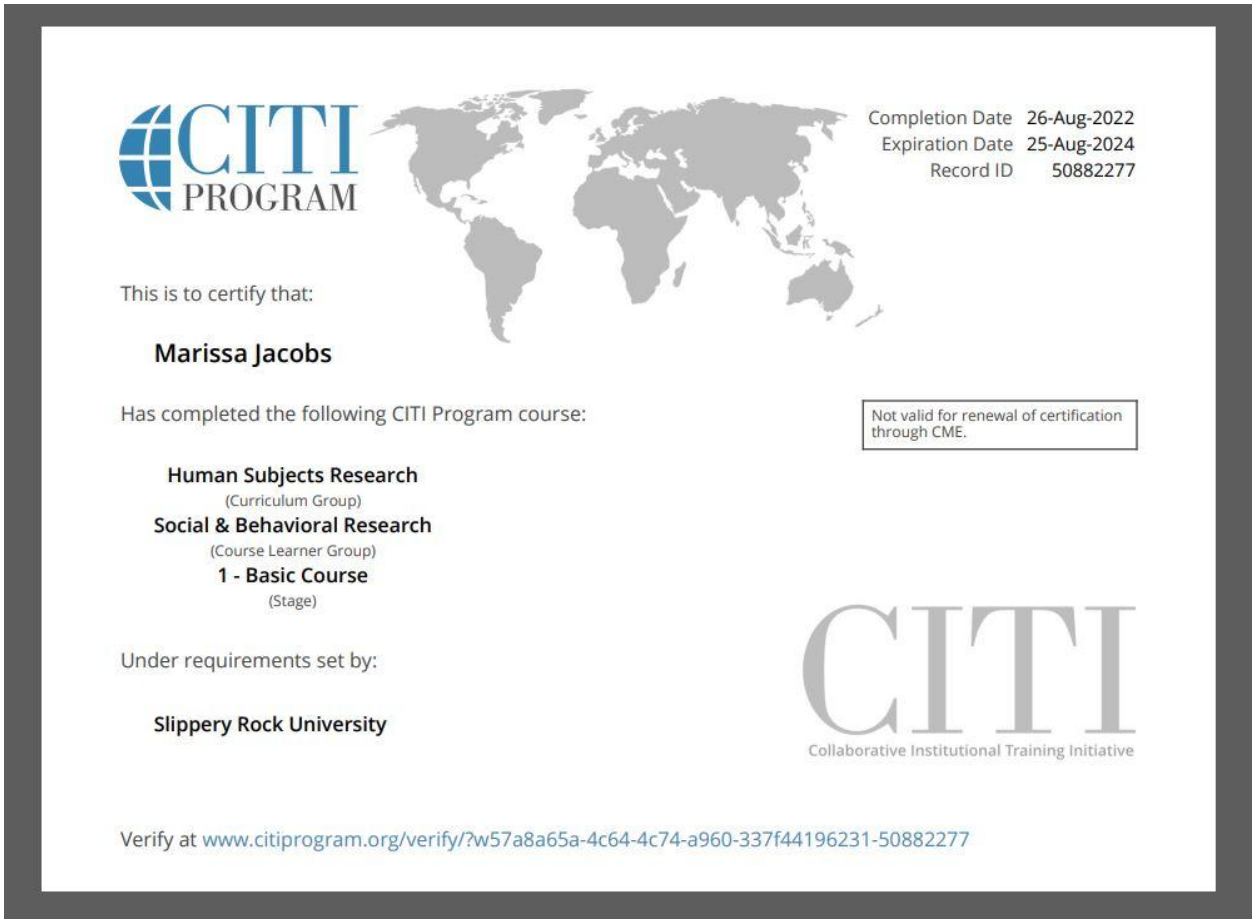
_____ 11. I feel refreshed when I spend time in nature.

_____ 12. I consider myself a steward of our natural resources.

_____ 13. I feel comfortable out in nature.

_____ 14. I enjoy encountering elements of nature, like trees or grass, even when I am in a city setting.

D) CITI Certificate



CITI PROGRAM

Completion Date 26-Aug-2022
Expiration Date 25-Aug-2024
Record ID 50882277

This is to certify that:

Marissa Jacobs

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Human Subjects Research
(Curriculum Group)
Social & Behavioral Research
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Slippery Rock University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w57a8a65a-4c64-4c74-a960-337f44196231-50882277