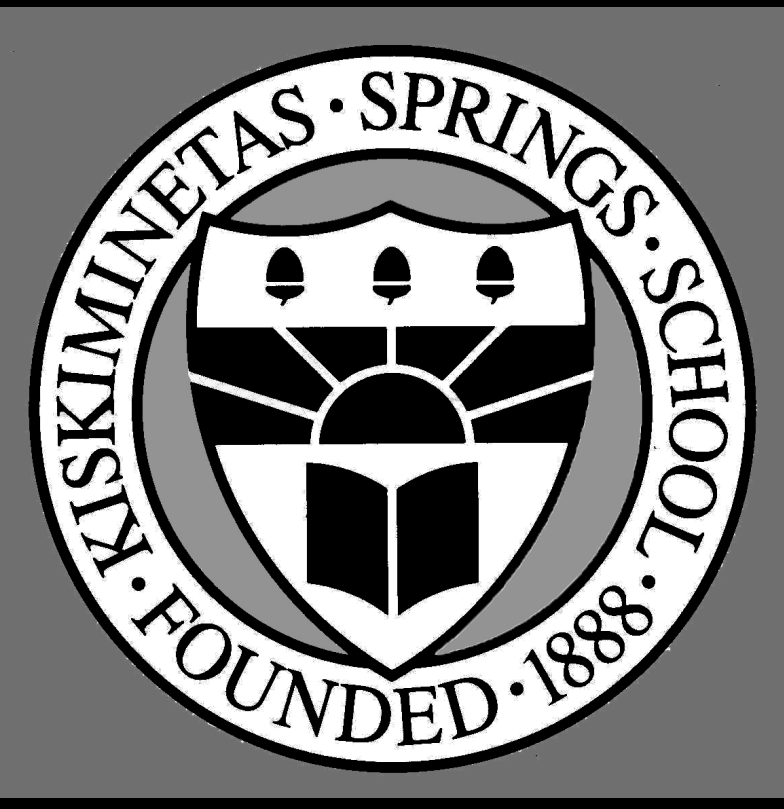


The Impacts of Virtual Methods on Student Engagement and Learning within the Classroom



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Introduction

There are two forms of environmental knowledge growing increasingly limited in North America's school-aged youth circles: a general understanding of consumptive uses of wildlife and experiences in recreational hunting practices. Hunter Education can enhance student understanding of natural resource management and the ecological importance of hunter participation. Similarly, environmental education programs are focused on teaching conceptual knowledge and skills needed to motivate individuals towards creating or participating in environmental solutions, which can include sustainable hunting practices.

Upper-level students of The Kiski School, an all-boys boarding school in Saltsburg, Pennsylvania, participated in a year-long supplemental life science curriculum where they watched their teacher hunt, fish, and forage Pennsylvania's natural spaces while he taught course content as means of finding success afield. The goal of this study was to assess student learning experiences when using hunting content from the videos to learn environmental science/biology content. The study also aimed to identify Wildlife Value Orientations (WVO) for the students as well as a New Ecological Paradigm (NEP) ranking in order to assess student views on the environment as an indicator of student learning experience. All in all, we want to answer the following questions:

1. Does student demographic and cultural background have an impact on student perceptions of hunting prior to learning about it through a curricular lens?
2. How does the use of an outdoor-themed YouTube channel in an all-boys, life science classroom contribute to student learning of standards-based, environmentally themed concepts?
3. How does the YouTube channel as an instructional modality affect student perceptions of hunting culture, methods, ethics, and purpose in an academic setting related to environmental science/biology topics?

Methods

Upon the end of the Captain Coleslaw Outdoors curriculum, a survey created using Qualtrics software was given to all students who participated in the *Captain Coleslaw Outdoors* science curriculum (n=39). A set of 14 statements was used to measure "basic belief dimensions" with the two primary wildlife value orientations (WVO's) of utilitarian and mutualism identified through prior research. Belief dimensions of appropriate use of wildlife and hunting designated the utilitarian orientation, whereas the mutualism orientation was indicated by social affiliation and caring belief dimensions. In addition, participants were asked to indicate previous participation in the hunting culture as well as questions regarding their experience learning with hunting on YouTube. We also asked students nine statements as part of the New Ecological Paradigm for children (NEP) in order to gauge student environmentalism and determine if this had an effect of student learning experience through the YouTube channel. MaxQDA and SPSS software were used to qualitatively and quantitatively assess the survey population for patterns related to the research questions.

References

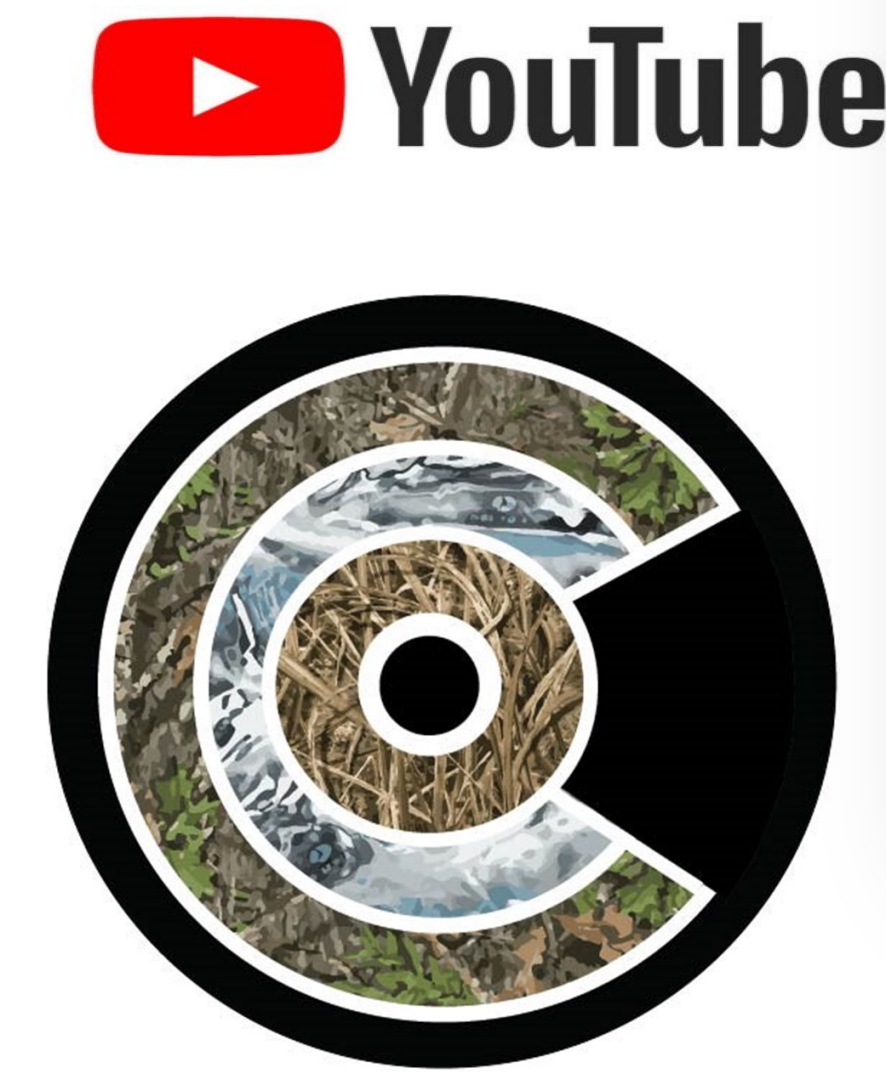
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The Boys of The Kiski School



Captain Coleslaw Outdoors Curriculum Description

Captain Coleslaw Outdoors is a YouTube channel created by Mr. Gino Colella, whose goal is to bring environmental education to his school students and their high school curriculum using self-recorded and self-edited "vlogs" of himself practicing consumptive outdoor experiences such as hunting, fishing, and foraging. During the 2020-2021 academic year, students of the Kiski School who were enrolled in a life science course with Mr. Colella were required to watch one-to-two videos a week on the *Captain Coleslaw Outdoors* YouTube Channel [which became available for student viewing on Monday mornings at 8:00 AM] for twenty-five weeks of the academic year. Students would also fill out an electronic worksheet as homework over the course of a given week by the end of the corresponding Friday school day, completing the virtual worksheet [using Blackbaud software] as they watched the videos. The worksheets asked questions about the experiences talked about in the videos while requiring students to use classroom content to answer the questions. This curriculum was specifically implemented for use in Mr. Colella's science classroom as a means of projecting life science content to a wide-ranging population of virtual and in-person students during the COVID-19 pandemic.



Discussion

1. Does student demographic and cultural background have an impact on student perceptions of hunting prior to learning about it through a curricular lens?

It appears that, based on the wildlife orientation values (WVO's) calculated for students, there is a noticeable difference in WVO depending on student demographic. Interesting enough, Pennsylvanian students were almost always ranked as utilitarian but just about every other state and country represented in this study is much more mutualistic towards wildlife. However, it does not appear as if student demographic impacted their learning experience based on the extremely low number of coded essays showing levels of discomfort in the classroom.

2. How does the use of an outdoor-themed YouTube channel in an all-boys, life science classroom contribute to student learning of standards-based, environmentally themed concepts?

This outdoor-themed YouTube vlog appeared to be a quality set of anecdotes for explaining curriculum concepts in an interactive way. There was a significant, positive relationship between overall experience of the Captain Coleslaw Learning Experiences and interest in the topics learned. This indicates that as a student found the outdoor-themed YouTube to be a positive experience, interest in the topics learned increased.

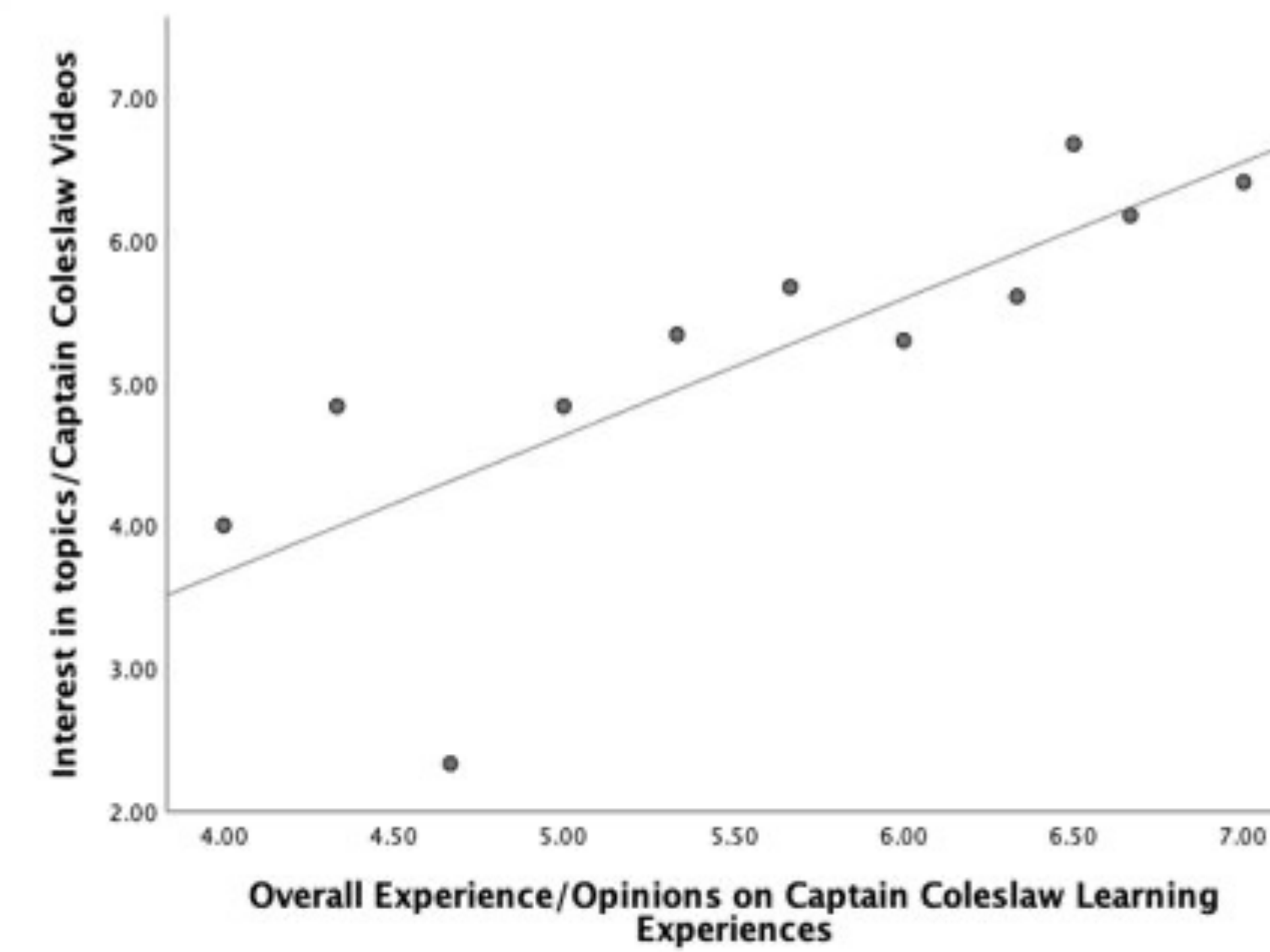
3. How does the YouTube channel as an instructional modality affect student perceptions of hunting culture, methods, ethics, and purpose in an academic setting related to environmental science/biology topics?

The YouTube channel appeared to have a positive effect on the students' perceptions of hunting culture etc. There was a significant, positive relationship between overall experience of the Captain Coleslaw Learning Experiences and a student's personal confidence in learning how to hunt, fish, and forage. This indicates that as a student found the outdoor-themed YouTube to be a positive instructional method, confidence in the students' abilities to partake in hunting methods increased.

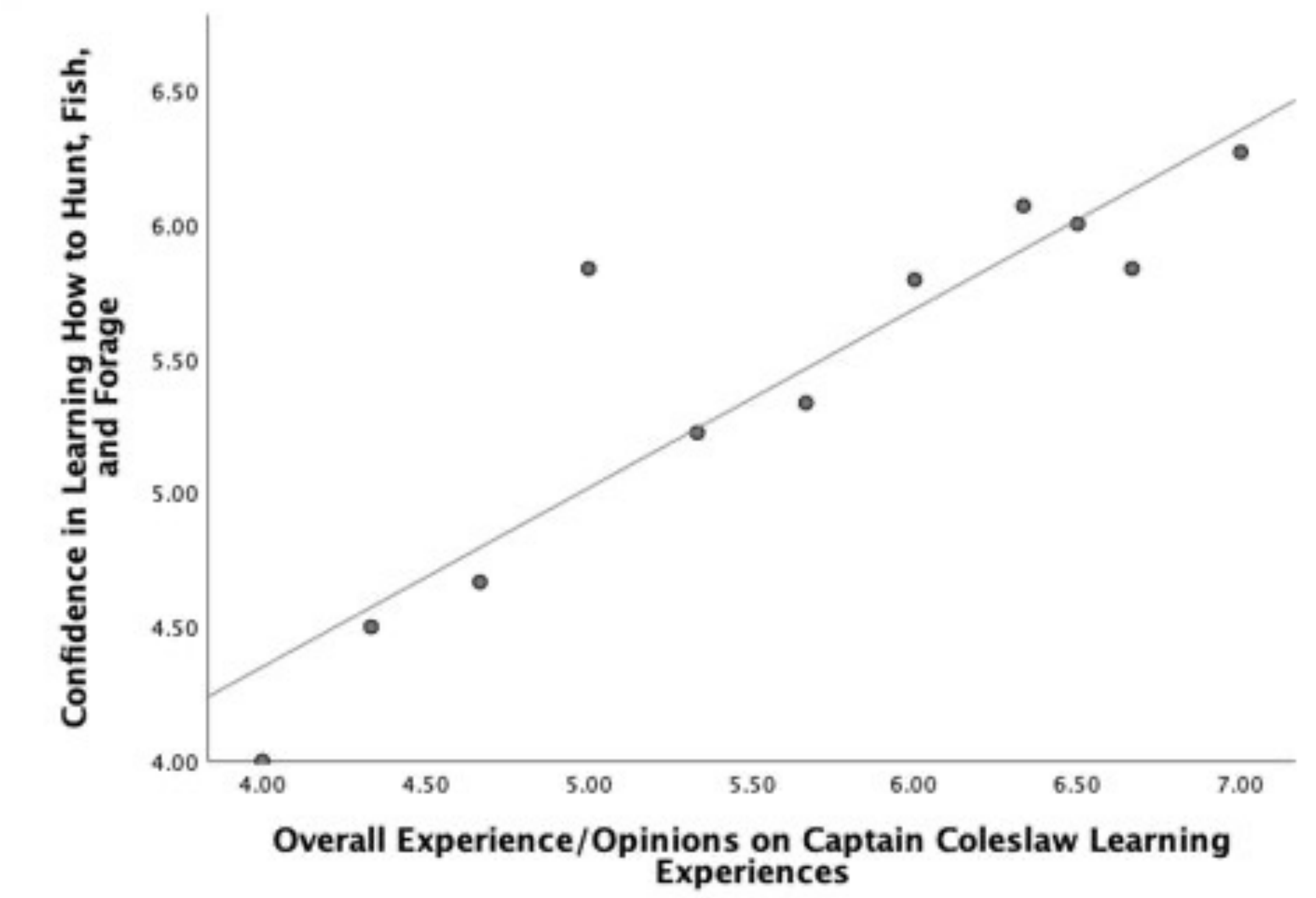
Results

Wildlife Value Orientation	International	Live within the United States, but not in Pennsylvania	Lives in Pennsylvania	Total
Utilitarian	6	2	12	20
Pluralist	3	0	0	3
Mutualist	0	3	1	4
Distanced	8	3	0	11
Total	17	8	13	38

Table 1: Analyzed means of utilitarian scale based on student residency (Analyzed on SPSS using Wildlife Orientations Values) ($\chi^2 = 23.036$; $p < .005$).



Graph 1: Significant bivariate test between overall experience of the Captain Coleslaw Learning Experiences and interest in the topics learned ($r = .69$; $p < .005$).



Graph 2: Significant bivariate test between overall experience of the Captain Coleslaw Learning Experiences and the student's personal confidence in learning how to hunt, fish, and forage ($r = .521$; $p < .005$).