Relation between Canoeing and Attendance and Behavior in Children

By

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INTRODUCTION

Adventure education, a form of environmental education, can be described as the implementation of field trips and programs involving physical activity in nature into classroom curricula. Canoeing, hiking through the woods, ropes courses and sailing are all examples of adventure education. These activities are done to make students more aware of the environment as well as what they can do to help preserve it. In addition to environmental knowledge, the trips provide an opportunity for students to work together and get involved outside the classroom. For example, canoeing down a creek or river requires students to work together, as a team, with other fellow classmates as well as teachers. There are many reasons why teachers take their students on adventure field trips. Some go on trips related to the current classroom curriculum in order to give students a hands-on experience. The hope is that this first-hand interaction *outside* the classroom will help students to better understand what they are learning *inside* the classroom. The work done by Farmer and Wott (1995) showed that this effect could occur if the field trips are followed by follow-up activities or trips. The study looked at fourth grade students who were taken to a park to work with plant and the field trip was coupled with other activities back at he school and in the classrooms.

Some teachers may schedule an adventure field trip in order to address behavioral issues in the classroom. The hope is that adventure field trips will allow students to unleash their built up energy on more productive tasks, like canoeing, instead of acting out in the classroom. Many studies also show that certain activities improve behavior among students due to the camaraderie that is built during these outings. The amount of teamwork involved leads to a heightened sense of group involvement and self-

efficacy. A meta-analysis done by Neill and Richards (1998) showed that outdoor programs can spawn positive cycles of personal growth and that there is evidence that supports the fact that these programs improve individual self-worth.

Current research shows that getting students involved in adventure education can have significant, positive effects on students' attitudes and behaviors. These studies provide a framework of information that shows the importance of environmental field trips for behavior. Clark, Marmol, Cooley, & Gathercoal (2004) focused on teenagers who attended a 21-day outdoor program and the results showed that adventure programs, lasting from a few days to a few weeks, have elicited positive effects on attitude and behavior. They showed that nature activities improved maladaptive behavior as well as immature defensive patterns (e.g. anger displacement, projection, etc.).

Volk & Cheak (2003) found that this result was not limited to high achieving and high ability students, such as those in advanced classes and those with high GPAs. They discovered that the improvement in students' classroom behavior and development of self worth occurred in adolescents with a wide range of academic backgrounds. This study eludes to the idea that adventure education and the environment is not bias toward gifted students, which would skew the results.

Louv (2006) described studies, which showed that students with ADHD are positively impacted by the opportunity to explore nature. Louv's study looked at children aged 7-12 who were able to go into nature and learn. They were taken to the forests for walks and hikes. Louv also links his ideas of this "nature" therapy as a legitimate form of behavioral therapy. His results showed that children with ADHD who attended these sessions responded and behaved better by exhibiting less negative behaviors in class.

Lastly, Bobilya & Akey (2002) observed incoming freshmen at Minnesota State University before and after an adventure trip that required a ropes course. The behaviors were measured using interviews and researcher observation. The behaviors and observations were coded and they used inter-rater reliability to determine the data analysis. Researchers noticed a significant improvement in the behavior of the students involved. The students were able to coexist and work together in a variety of ways. Some students reported that there was a strong development of teamwork in the school

This current research study is the first to my knowledge that makes looks at the relationship between canoeing (an adventure education program) and attendance. Little research has been found that looks at younger children and there has been no mention of the impact that adventure education may have on attendance. Attendance is an important key in education in terms of the child's opportunity to learn as well as in relation to funding for individual schools.

In the current study, fifth-grade children were studied and the particular outcome studied is attendance. Similarly, this study also focuses on teachers' views of behavior change in relation to the adventure trips. The purpose of this study is to examine the effect of an environmental education program on school attendance and classroom behavior in elementary school children. Comparisons will be made between a group of children who participated in the environmental education program and children who did not participate. It is expected that children who participated in the environmental education program will have higher attendance rates and lower rates of referral for behavior problems. This pilot study is an important first step in identifying factors that might improve attendance in public schools, which could potentially improve

achievement and school success. The study also attempts to find a relationship between the canoeing trips and behavioral problems in the fifth grade classrooms.

METHODS

Participants

In order to identify the impact of canoeing on attendance, a total of four classes that participated in the canoeing were chosen as the sample. Fifth-grade students from local elementary schools participated in canoeing field trips, all of which were scheduled prior to the initiation of this research project. There were a total of 341 students (164 males, 177 females) accompanied by their teachers. A total of 12 teachers from the four schools enrolled their classes in this canoeing field trip experience.

A second group of four classes was chosen as comparable schools to be used as the control group. The control group consisted of 363 students (171 males, 192 females) from four schools. Therefore, each school that sent fifth grade classes canoeing has a control group school with a comparable fifth grade class who did not go canoeing. Each school has a matching control group school based on certain characteristics. These schools were chosen based on the percentage of economically disadvantaged students who were on free or reduced lunch (low SES), school location (inner city, fringe of inner city, etc.), student to teacher ratio, racial ratio and overall school population.

Procedure

Immediately before beginning the canoeing adventure trip, the teachers and students were given an informational lesson about the environment. They were then

instructed on how to paddle, navigate, and how to be safe. The students were given instruction for 25 minutes. After the introduction, students were split up into two groups. One group would go canoeing on the water in two canoes that held 15 students each (there was also a canoe guide and chaperone in the boat). This group would be on the water for roughly an hour and a half. The second group would complete an assigned task related to the classroom curriculum currently being studied. One class was studying cartography and completed a mapping assignment while waiting for their turn on the water. Once the first group docked the canoes, all of the students met for lunch and then switched places afterward. At the conclusion of the field trip, the students were given more information about how they could apply what they had learned to everyday activities and to their class studies.

Attendance and behavioral data were collected for all of the participating classrooms. The attendance data was for the first semester of the school year (Aug. to Dec.), which was the same time the canoeing trips were being carried out. The attendance data was analyzed; means and standard deviations of the groups were calculated. The data were then analyzed using t-tests to aid in the comparison of the control group and the experimental group.

A teacher questionnaire was issued to the 12 teachers who took his/her classes on the canoeing trip. This questionnaire looks at the reasons for the class' participation in the canoeing trip, the impact the trip had on the students' attendance and behavior, and it also looked at the overall interest of teachers and students. To gauge the reasons for the participation in the trip, questions were asked about the class curriculum learning objectives and its relevance to the canoeing. The questionnaire also asked questions that

required teachers to rate the students' attendance and behavior on a scale of 1-5. A "1" regarding to attendance refers to lower attendance and a "5" represents higher attendance. When discussing inquiring about behavior, a "1" refers to less hyperactivity/ better attention and a "5" describes more hyperactivity/ less attention. The last grouping of questions focused on interest levels of the students and the satisfaction of the teachers regarding the field trip. One question asks the teacher to rate the students' level of excitement on a scale of 1-5 ("1" being very excited, "5" being not excited) and another question was open ended, allowing teachers to fully describe if they enjoyed the canoeing, why, and if they would take their class again.

RESULTS

The first set of results can bee seen in Table 1. These numbers show the comparison of the attendances between the experimental (those who went canoeing) group and control (those who did not go canoeing) group. The average number of days missed, from August to December, by the students who went canoeing was slightly higher than the average of those who did not go canoeing.

Table 1

Average Number of Absences

Experience	# of Students	Mean/St. Dev.
Canoeing	341	6.25(5.73)
No Canoeing	363	5.80(5.64)

There was also a t-test run on the same data to see if there was any significance based on a p-value of $p > .05$. The computations showed that there was no significance in the numbers because $t(702) = 1.03$, which far exceeds the p-value needed to be significant.

Once the quantitative data was analyzed, it was time to turn to the qualitative data found in the teacher questionnaire that was distributed to the 12 teachers who took his/her students canoeing. Only three of the questionnaires were returned for analysis. However, there were still some results that could be extrapolated from the teachers' responses.

The first three questions focused on the reasons for participation the canoeing field trip. Two of the teachers responded by stating that it was a part of their science curriculum and the third explained that the trip was to "reinforce mapping skills" as a part of the current topic being studied in class. All three responded, "yes" to the fact that the trip was a part of the curriculum and that they had specific learning objectives in mind for their students.

The second set of questions focused on the teachers' assessments of the field trip's effects on their students' behavior and attendance. Based on a scale of 1-5, all teachers circled "3" for all questions referring to these topics. This implies that the teachers did not notice any changes in attendance or behavior.

The final section of questioning looked at the overall interest of the students and the teachers' satisfaction with the canoeing trip. All of the teachers unanimously rated their students' excitement level as a "1", or very high excitement. The final question was aimed at the teachers' satisfaction with the canoeing trip by asking if they would take their students canoeing again if given the opportunity. The three teachers said, "yes"

showing that they see some type of positive results from this field trip to repeat it again with their students.

Field Observations

Another form of qualitative data that proved to be valuable information were the researcher observations that were recorded during the canoeing field trips and the questionnaire pick ups/drop offs. I was able to attend multiple field trips that were attended by children in 5th grade, 6th grade, and 8th grade. The first observation concerned the students themselves. It was observed that the younger children were more obedient and more attentive than the older children. The 5th grade students wanted to learn and wanted to show off what they knew from class. They were consistently expressing interest in the facts being told by the canoe guide, asked relevant questions, and added their own insight. Some students brought up conversation about the role canoeing played during the Lewis and Clark expedition. The older students decided to rebel against the adult authority and acted "too old" for the field trip. They were more concerned with dirtying their clothes and yelling at each other. The majority of the older students had no intention of adding their own information and many did not fully participate.

Another important observation involved the teachers. It could be seen that there were individual differences in the interest of the teachers who attended the field trips. Many teachers appeared passionate about the material that revolved around the canoeing trip, while others were disengaged with the material. It appeared that they were interested

in providing a fun activity for their children but were not interested in canoeing or the environmental education components of the field trip.

DISCUSSION

The purpose of this research was to determine if there was a relationship between canoeing and attendance and behavior in fifth grade students. The results did not support the hypothesis developed by the researcher. Instead of canoeing improving attendance and behavior, it had no effect on these two measures based on the t-tests ran and the analysis of the questionnaire.

There are many speculations that can be made to explain why the data was not significant. One reason that could have affected the data results is that students were only taken canoeing once during the year. There was no follow up trips to reinforce the effects of the first trip. Farmer and Wott (1995) discovered that follow up activities and trips really “reinforce and solidify concepts” learned during the initial trip. This study was done on fourth grade students and shows that it would be applicable for this sample of fifth grade students.

As mentioned, there were three teacher questionnaires returned for analysis. All of the questionnaires showed that the teachers took their students canoeing in relation to their current curriculum and that canoeing was their only adventure/outdoor field trip. They all had specific learning objectives in mind. All of the teachers reported positive reactions from their students and wrote that they would take their class canoeing again. The positive reactions were statements made by the students during the trip or after the trip that signified an enjoyment and appreciation for the canoeing field trip. However, all

teachers reported that they did not notice any change in the students' behavior or attendance. They based their opinions on their observations of the students' attendance in their class. The teacher takes attendance each day and maintains a record of who does and does not show up for class.

There are several possible reasons as to why there were so few questionnaires returned. One is that the teacher may not have taken the trip seriously, as one of the teachers who only brought their students for fun, and did not want to take the time to complete it. Another reason is that the questionnaire was handed out months after the trip and the teachers were too busy with other curriculum matters.

The qualitative data from field notes contributes to our understanding of the questionnaire findings. The researcher observations and the teacher responses reveal that the 5th grade students had high excitement and a high level of interest in the field trip. The teachers who took their students because they wanted to enhance the learning experience of their current curriculum were adamant about giving the necessary information in the questionnaires and were very helpful to answer questions at the field trip site.

Limitations

The data and results had many setbacks. The necessary data from the school system was wrong. The wrong database file was sent containing the attendance records of the students. In addition, there were only three out of twelve teacher questionnaires returned for analysis. The teachers chose either not to participate or have since found jobs elsewhere leaving the chosen schools in the study. Time was a large constraint due to the canoeing season. Only one semester of data could be used because they finish canoeing

in early October and do not begin canoeing again until April because of the temperature and weather conditions. There was also a limit on sample size based on the fact that there was a limited number of teachers (12) who were able to take their students canoeing.

Recommendations for Further Research

The relationship between adventure education and attendance and behavior is an important area for continued research. This research was very limited in the number of classroom samples due to the limited number of teachers participating in the canoeing program. It would benefit the research to involve more teachers who are willing to respond and cooperate with the research study groups. This research study had an abysmal return rate for the teacher questionnaires of only 25%, or 3 out of 12. Small sample sizes restrict research credibility in terms of the data analysis and it is especially true of qualitative data that is based on self-report and inter-rater reliability.

It should also be noted that this study involved participants who experienced the activity of canoeing only once and for just one day during the school year. Creating a schedule that allowed teachers to take their children on multiple trips or elongate the exposure of the trips to multiple days instead of only once may increase the probability of creating a better understand of the children's responses to the trip. It would also help eliminate some of the confounding variables. For instance, if students went on a day that it rained and a day when it was sunny then the researcher may be able to look at whether or not the weather had any effect on the trips and/or the data. One group of students went canoeing on a day that rained throughout the entire trip and some of the children were miserable and complained the whole time. It would have been interesting to see how the

same children who were miserable in the rain would have reacted had they been able to canoeing when the sun was out. In the same way, it would have been interesting to see if those students who had good weather on their trip still reacted the same way during poor weather conditions like those who attended in the rain.

This study only involved two observations of the classrooms during the canoeing field trips. These observations provided some good general information concerning what went on during the trips, but given the time constraints there was no opportunity to obtain enough observational data to be analyzed. It would have been ideal if researchers were able to attend all of the classrooms' trips and code the children's reactions and responses in relation to the activity as was done in the research of Falk and Balling (1982). Falk and Balling coded phrases of the children they observed as task-related, non-task behavior, or ambiguous. They were able to create an extensive data set and analyzed the children's responses.

Table 1.3 *Teacher Questionnaire*

Relation between Participating in a Specific Environmental Education Program and Attendance and Behavior in Children
Teacher Questionnaire

1. Why did you take your class canoeing?

2. Did it have anything to do with your current curriculum? Yes No

3. Did you have specific learning objectives for the students? Yes No

4. Did you notice a difference in the average attendance the week before or after the field trip?

   Yes No

   (Please rate from 1-5. 1 being lower attendance and 5 being higher attendance)
   Week before canoeing trip: 1 2 3 4 5
   Week after canoeing trip: 1 2 3 4 5

5. Did you notice a difference in your students' behavior after the field trip?
   (Please rate on a scale of 1-5. 1 meaning more attention, less hyperactivity, and better conduct in general, 3 being no change and 5 meaning more hyperactivity and less focus)

   1 2 3 4 5

6. In your opinion, to what degree do the students, in general, look forward to these activities?
   (Please rate on a scale of 1-5. 1 being "really look forward, 3 being indifferent, 5 not excited.)

   1 2 3 4 5

7. Did you take your class on any other outdoor/adventure field trips this year? If yes, explain.

8. Would you take your students canoeing again? Why or why not?

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