

Purdue University  
Department of Entomology  
Undergraduate Capstone  
Project Summary

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Project Title:

Effects of Peer Pressure and Education on Entomophobia

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### Introduction

People around the globe have varying perspectives about arthropods, particularly insects and arachnids. The most common is that of fear. The most likely reason for this behavior toward arthropods could stem from a general lack of knowledge of this phylum. People seem to show higher affinity for species they can identify than for unfamiliar species (Schlegel 2010). From this, it can be assumed that with more familiarity or positive encounters with a particular species results in comparably less fear. This also means that little familiarity of an organism may welcome greater fear. The two may be correlated. For children, familiarity may come from education and peer pressure in the classroom. The goal of this project was to determine if education and peer pressure in the classroom played a role in decreasing or even eliminating fear of insects in fifth grade children.

### Methods

Fifth graders were chosen based on data from a 2009 study on intensive treatment of specific phobias in children and adolescents which showed that the average age for a phobia to develop is about eight to ten years old (Davis *et al* 2009). Two elementary schools from the same town were chosen, each having three fifth grade classes. The study involved 45 minutes for a pre-test, insect handling, a brief lesson, more insect handling, and finally a post-test.

#### *Pre/Post-test*

The pre-test and post-test were to get an idea about how each student felt about insects before and after having the opportunity to handle a cockroach and hear a short lesson. Each class was given the same test.

#### *Insect Handling*

For the insect handling portion, each student was given the opportunity to hold a Madagascar hissing cockroach, *Gromphadorhina portentosa*. The student's reaction to the cockroach was then recorded on a scale of 1-5; 1 being not afraid at all and willing to hold the insect, and 5 being terrified and unwilling to hold the insect. For each school, three categories were made for

insect handling: individual handling without peers around before and after the lesson; class handling with peers around before and after the lesson; and individual handling before the lesson with class handling after the lesson.

### *Lesson*

The lesson was very brief, approximately fifteen minutes in length. Each class was given the same lesson focusing on positive roles insects play on Earth, e.g. decomposition, pollination, bio control, et cetera. The lesson also covered ways the insects are bad as well as the different ways to combat those problems without being afraid.

### **Results**

After collecting data from the pre-tests, insect handling fear scores, and post-tests, data were compiled into a spreadsheet to determine if any significant differences in feelings of students before and after the lesson and insect handling existed. While there is no apparent change in the general feelings about insects, the percentage of students that thought cockroaches were good was much higher after the insect handling and lesson. In fact, before handling the cockroach and listening to the lesson, the percentage of students that felt good about cockroaches was 22.1%. After handling the Madagascar hissing cockroach and listening to the lesson, the percentage of students that felt good about cockroaches went up to 92% of 113 students. Insects that were not seen or handled during the presentation such as bees had slightly lower percentages of students agreeing that they are good. Peer pressure among students during insect handling did not prove to have any significant impact on the results. However, I did see slight improvements in each class for the handling fear ranking; 44% of the students have lower fear scores after the lesson. Eleven of these students improved as much as starting out with a score of 5, and coming back to handle the insect for a score of 1.

### **Conclusions**

While peer pressure may not have had a large impact on fear, education and exposure to the cockroach did indeed play a role in decreasing fear levels in many students. After not only learning about this species, but also having the chance to see and hold it, students' feelings about cockroaches in particular dramatically improved. More research in this area will need to be done, but what we have so far could be an important piece of information and an encouragement to outreach entomologists. By exposing and educating children about insects, fears could be diminished making the way for more future entomologists.

### **Improvements**

There is much improving to be done on this project. The time spent with each class should be longer to expound upon information given during the lesson. Showing dead specimens could also be a useful form of positive exposure for those insects that cannot be held because of the flight risk – bees, ladybugs, and flies. Increasing the amount of classes would also improve the study by eliminating random variables such as intelligence level, teacher interaction, and student behavior.

References:

- Schlegel, J and R. Rupf. 2010. Attitudes towards potential animal flagship species in nature conservation: A survey among students of different educational institutions. *Journal for Nature Conservation*: 18(4).
- Davis, TE, T. Ollendick, L.G. Ost. 2009. Intensive Treatment of Specific Phobias in Children and Adolescents. *Cognitive and Behavioral Practice*: 16(3).