

Traditional and Leading-Edge EE

The Global Impact of Inquiry-Driven Educators  
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Is it possible to move from individual observations and questions to global change? How can educators directly affect species conservation, community growth, and global understanding? We will explore how, using a participatory learning model, inquiry can be a fundamental tool for dialogue and lead to the co-creation of knowledge necessary for authentic grass-roots change. Inquiry can go far beyond raising student scores on proficiency tests; educators, and students, serve their communities best when they engage in vital issues surrounding community and ecological health. From cheetah conservation in Namibia to blue-and-gold macaw reintroductions in Trinidad, case studies are drawn from Earth Expeditions, a grant-funded partnership program from Miami University's Project Dragonfly and the Cincinnati Zoo and Botanical Garden that offers an immersive international research experience for formal and informal educators.

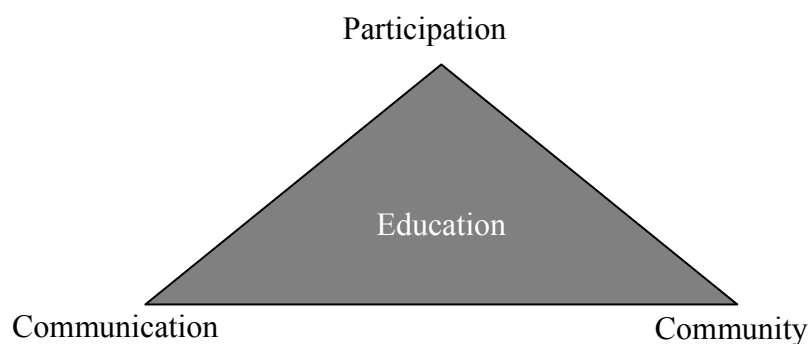
## INTRODUCTION

The image of educators as people who merely pass on knowledge from textbooks has limited utility in our era of rapid social, environmental, and technological change. This, combined with standardized tests' laser focus on finding the correct answer, has today's educators struggling to find their way back to a love for facilitating learning and a passion for serving as an educator.

For participatory learning, educators should be seen as ambassadors who create as

well as transmit knowledge, who promote authentic dialogue at all levels of society, and who inspire students to do the same. To accomplish this, the Earth Expeditions program uses inquiry to drive learning with formal and informal educators in global conservation settings. Chart 1 below represents this three-pillared approach to education. We particularly emphasize the role communication plays in creating communities of investigation.

Chart 1. Pillars of Inquiry Education.



#### THE USES OF INQUIRY

Student-created and educator-facilitated inquiry has a unique potential to boost civic engagement across many dimensions. Inquiry can, for example, inspire environmental participation through the arts or sciences, and may be driven by public health, political, social, or ecological concerns. By encouraging participants to direct their own learning, inquiry can connect people to their community in a manner that is relevant to their concerns and aspirations (Trautmann, MaKinster, and Avery 2004). Inquiry motivates people to learn the subject-at-hand as they have had a hand in its creation. We have developed an inquiry process that works well with educators and their students, called Dragonfly Quest (Dragonfly 1998).

Some benefits of the inquiry process are included in Table 1. Participants of this 2005 North American Association for Environmental Education (NAAEE) Conference session expounded on each during small group discussions.

Table 1. Benefits and Outcomes of the Inquiry Process.

Empowerment
Increased connection with research in the natural world
Cooperation
Increased quantity and quality of follow-on questions
More student involvement
Variability in style (accommodates many types of learners and degrees of self-direction)
Teaches the conceptual framework of how to learn
Inspires educators through new discoveries
Students witness and experience benefits first-hand

Each Earth Expeditions field course includes an international immersion experience where educators utilize the Dragonfly Quest method to explore their own research questions and practice inquiry methods first-hand in a field setting.

## PARTICIPATION

Many adults who participated in formal education can recall when they were asked to re-create a scientific experiment performed hundreds of times before. Many of us were left with an empty feeling that meaningful questions are only developed by scientists, and that students robotically re-create these dated scenarios. Participation in all aspects of learning breaks the commonly observed trend of what Paulo Feire calls the narrative-character of teaching, in which educators dictate particular facts, in effect filling the student with information, while the student is assigned the role of passive listener (Feire 1970). Participatory approaches can make a difference--if educators sufficiently commit to real involvement, so the common phenomena of manipulation and tokenism are avoided (Hart 1997). For example, one Earth Expeditions educator investigated

whether students can gain an appreciation for the natural world when involved in creating a nature-based exercise. Students in her 12-week study were provided with the potting materials and a variety of seeds and were asked to set up an inquiry on growing plants in different conditions. This simple assignment was exceptionally successful because the students personally designed and implemented all aspects of the project. Not only did the students discover effective practices for growing seeds, they left this project with a new sense of connection to the natural world.

## TRANSFORMATION

The Earth Expeditions program brings educators to conservation field sites in Africa, Asia, and the Americas to engage in inquiry and action projects. By participating, educators increase their own personal content knowledge and passions for learning while expanding their breadth of understanding of inquiry teaching styles. By participating in conservation research first-hand, educators are able to build relationships with international researchers, informal educators, and conservationists from around the world. Hundreds of Earth Expeditions educators have expressed an inherent professional and personal change from participation in this program. Cutting edge research and methods can be brought to public school curricula when teachers partner with university science-educators, researchers, and with pre K-12 teachers (O'Neal 2003).

After participation in conservation work in Ojiwarango, Namibia, one educator created an inquiry professional development program for his school district. His work made the critical jump from the classroom to the teacher's lounge. Colleagues discussing inquiry teaching methods and student achievement replaced endless conversations about state examinations. Another group of Earth Expeditions educators collaborated an after

school club focused on inquiry, conservation, and wildlife, inspired by the teacher's research in Africa on cheetahs. Young people like those mentioned maximize their desire and capacity for learning (Hart 1997).

During the once-in-a-lifetime experience of returning blue-and-gold macaws back into their native habitat of Trinidad (where they had been wiped out), one educator started a program with his students to track local bird populations in the United States, connecting student research to the many North American birds that over winter in Trinidad. The students have created an international program to track birds.

One student group, inspired by a story of their teacher's experience with Belizean community-based conservation efforts, began questioning environmental degradation in their neighborhood. The students launched a campaign to save a local canal by working to organize information sessions for local residents. These students understand how to assess a situation, collect information, ask questions, think about their findings, and draw conclusions before sharing results in a broader context. Restating our mission, these students are the alliance of individuals with firsthand knowledge of inquiry-driven, community-based learning for the benefit of ecological communities, student achievement, and global understanding.

There are barriers to inquiry. For example, many of our educator focus groups identify the conflict with educational standards--teachers feel pressed to adhere to pre-created lesson plans designed to satisfy a specific test calendar (Trautmann, MaKinster, and Avery 2004). Most barriers are unfortunately school administration or state driven. We believe the best antidote lies in the teachers, school administrators and students who genuinely engage in community-based projects like those shared in this paper.

## CONCLUSION

Despite the continuing dominance of lecture and text-based learning, we are continually amazed by how many disciplines can successfully adopt an inquiry-based approach to learning. From mathematics to drawing classes, educators experience the value of inquiry. We believe that the co-creation of knowledge through inquiry leads to the optimistic goal of democratic and sustainable communities (Hart 1997).

Environmental issues, including wildlife conservation, are particularly well suited for participatory approaches, since the environment is shared by many people and many species. We are convinced educators can become a dominant force in conservation. But they won't if we support a system that requires educators to spend all their time in the classroom.

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