RESEARCH BRIEFS

January 2014

Georgia Southern College of Education

Urban Fifth Graders' Connections-making Between Formal Earth Science Content and Their Lived Experiences

Author
Katie Brkich, Assistant Professor, Department of Teaching and Learning

Abstract

Earth science education, as it is traditionally taught, involves presenting concepts such as weathering, erosion and deposition using relatively well-known examples—the Grand Canyon, beach erosion and others. However, these examples—which resonate well with middle- and upper-class students—ill-serve students of poverty attending urban schools who may have never traveled farther from home than the corner store. In this paper, I explore the use of a place-based educational framework in teaching earth science concepts to urban fifth graders and explore the connections they make between formal earth science content and their lived experiences using participant-driven photo elicitation techniques. I argue that students are able to gain a sounder understanding of earth science concepts when they are able to make direct observations between the content and their lived experiences and that when such direct observations are impossible they make analogies of appearance, structure and response to make sense of the content. In addition, I discuss the importance of expanding earth science instruction to include man-made materials (MAMs), as these materials are excluded traditionally from the curriculum yet are most immediately available to urban students for examination.

Practical Application

In this study when students were making connections to earth science concepts in their everyday lives, connections to and confusion over non-natural, man-altered materials played a significant role in student connection-making. Many in the science education community believe that we teach children science in school in order to help them understand their world and make informed decisions about their place in that world. However, that world is not just the naturally occurring world. The reality of life in our modern society is that students live in a man-altered world of concrete, brick, glass and plastics. By only teaching naturally occurring geology and earth science processes in our science classes, textbooks and standards, we are choosing to not teach students the content that would actually connect to their everyday lives.

Citation

Brkich, K. L. (2013, In Press). Urban fifth graders' connections-making between formal earth science content and their lived experiences. *Cultural Studies of Science Education*. DOI 10.1007/s11422-013-9505-8.

For more information, contact Dr. Katie Brkich (kbrkich@georgiasouthern.edu)

To learn more about Georgia Southern University College of Education, visit
coe.georgiasouthern.edu