Who is participating in geoscience teacher education workshops, why are they doing it, and what are they learning?

Scott A Nowicki, University of Nevada, Las Vegas

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Evaluation results from the 2010-2011 Nevada Collaborative Teaching Improvement Program administered by Nevada State College, Henderson NV.

S.A. Nowicki, Department of Geoscience, University of Nevada Las Vegas, scott.nowicki@unlv.edu

Overview

Presented here are evaluation results from the geoscience teacher education workshop: Invigorating High School and Middle School Earth Science Through Inquiry and Student Research (2010) and Climate Change Science: Content and Inquiry Methods for Secondary Teachers (2011). This program was conducted by PI Dr. Larry Rudd at Nevada State College and Co-PI Dr. Steve Rowland at UNLV under a state-funded Nevada Collaborative Teacher Improvement Program (NeCoTIP). During five years of summer workshops (2007-2011) over 70 middle and high-school in-service teachers in the Clark County School System participated in a combination classroom and field-based professional development program focused on local geologic field and paleontological resources. The last two years of the program evaluated here represent an established and sustainable program. Evaluation consisted of pre and post-tests, written self-evaluations, and surveys conducted a year later. As seen in other similar program evaluations, pre and post-testing did not show significant improved applied knowledge despite high reviews in teacher evaluations of the program. Anecdotal evidence and later surveying suggests that participants did gain confidence and willingness to teach earth science topics, although use of resources and content following the program remained low. With such limited results, an in-depth analysis of the willingness to teach earth science topics, although use of resources and engagement following the program is represented here. Pre and post-testing did not show significant improved applied knowledge despite high reviews in teacher evaluations of the program. Anecdotal evidence and later surveying suggests that participants did gain confidence and willingness to teach earth science topics, although use of resources and content following the program remained low. With such limited results, an in-depth analysis of the willingness to teach earth science topics, although use of resources and engagement following the program is represented here.

Why are they participating?

To increase skills and knowledge, and for extra money.

When asked what is the most potentially compelling benefit to participation, the resounding answer is graduate credit.

What would you find to be a more compelling benefit to encourage teachers to participate in a science education program?

- Graduate credit from UNLV so it could be counted toward a masters program that is already in progress.
- Cash + graduate credit
- Lab supplies, classroom ready lab activities, or Either monetary compensation, or graduate credit.
- Grad credit... NSC (undergraduate) credit isn’t of any value
- Cash and credit will get teachers out EVERY TIME but there are some that want and need the information as well.
- Offer the course during the school year as a workshop.
- Field experiences: ready made field trips and lesson plans, cash, graduate experience to learn about this great state. To learn so many skills.
- Graduate Credit Certificate of completion for the school for recognition, "East High School teachers trained in Geology...?"
- Graduate credit, monetary compensation
- Collaboration, cash, credit

What are teachers using from the program?

The skills and knowledge that participants are struggling with and gain the most are: 1. GEOL 101 (graduate course), 2. powerpoint lectures, 3. classroom activities (including GoogleEarth)

What provides the greatest potential benefit?

- The skills and knowledge that participants are struggling with and gain the most are introductory science concepts.
- The materials most used in the classroom post-program are: 1. rock and mineral samples, 2. powerpoint lectures, 3. classroom activities (including GoogleEarth)
- A traditional graded physical geology (GEO 101) course has the most potential to benefit earth science teachers: topics at the appropriate level, samples, activities and lectures
- Graduate credit is the most compelling carrot.
- Potential solution: Graduate course offered for credit with a co-requisite of a graded Geology 101

Acknowledgement:

This work was funded with grants from the Nevada System of Higher Education under the Nevada Collaborative Teaching Improvement Program (NeCoTIP), funded by the US Department of Education.