Teaching Economic Geology with a Flipped Classroom

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The repetitive nature of many power point lectures can lead to slowed learning in many classroom settings. One way around this issue is by incorporating experiential learning methods into the curriculum. One such method is the flipped classroom where students view videos of the lectures and do complimentary readings before coming to class where the viewed lectures and readings are reinforced by in class problem sets that are typically done in groups and directed by the instructor and teaching assistants. Several studies have been published on the use of the flipped classroom in teaching other science subjects, such as physics. However, fewer studies are available to determine its use in geology which is a discipline less conducive for the use of problem sets. In this study we will determine how effective the flipped classroom will be in teaching economic geology.

The study will take place over three years and will start with one of the lectures using the flipped classroom technique the first year and increase the number of lectures that use the technique each year of the study. Grades will be compared between the material covered in the flipped classroom lectures and those covered in the non-flipped classroom lectures. Furthermore, the results will be compared between the non-flipped years and the flipped years. This will determine whether greater comprehension of the subject matter is gained using a flipped classroom. Additionally, a short questionnaire will be filled out by the students asking their opinions of the technique. In this presentation we will present the results of the first year of the study and detail difficulties and strategies that may help others employ the flipped classroom in their own courses.