Exploring Scientific Literature

I. Description

This exercise on the interpretation of scientific literature was completed in a large (~300 students) introductory biology lecture at the University of Pittsburgh. Students were given handouts that contained copies of the abstract and four figures from an article that focuses on the development and biophysical characterization of aquaporin. The figures emphasize the biophysical characterization of *Drosophila* aquaporin (The development of the aquaporin is more suited for a different class). The exercise was a hybrid of lecture and group-work. First, students were given the opportunity to familiarize themselves with the abstract and figure set. Then, group discussion (facilitated by undergraduate teaching assistants) gave them a chance to identify the general concepts. After a sufficient amount of time for group discussion, the abstract and figures were discussed as a lecture. Four questions pertaining to the activity were added to the subsequent mid-term exam.

This article was chosen because of the variety of introductory biological concepts it employs in its content. The abstract provides an exercise in reading scientific literature. The figures provide practice in the application of basic biological ideas: transport mechanisms in cells, genetic homologies among radically different organisms, toxicity, temperature and its relation to energy, and specificity in biological structures.

The goal of this exercise was to make students more comfortable with scientific literature, while simultaneously demonstrating the significance of fundamental biological concepts in scientific research. Student performance on the activity questions averaged slightly below the average for the whole exam (66% v. 68%) but may have been due to a very low average on one application question (see question #3 "Exam Questions").