Statement of Purpose

There is a great demand in our world for a well-rounded, educated society. This means that students need to be successful in all areas of education, including science. Currently, the students in the United States are not performing at a level comparable to other nations around the world. This means we are not preparing our students well enough to keep up with the growing demands of a global economy. Our students are scoring low on comparative exams in reading, mathematics and science; students are not prepared for college courses; and the United States has a lower graduation rate compared to our global competitors. (Next Generation Science Standards, 2012)

Current issues, demand that students have a solid science background. As a global society, we face issues of conservation, global warming, energy needs, and the list goes on. Jobs are also demanding stronger science and mathematics skills in order to keep developing new technologies and stay on the leading edge of economical developments. It is necessary to teach students the content necessary to address these needs and issues and keep up with the global economy. The Carnegie Commission addresses the need as such:

Over the coming decades, today’s young people will depend on the skills and knowledge developed from learning math and science to analyze problems, imagine solutions, and bring productive new ideas into being. The nation’s capacity to innovate for economic growth and the ability of American workers to thrive in the global economy depend on a broad foundation of math and science learning, as do our hopes for preserving a vibrant democracy and the promise of social mobility for young people that lie at the heart of the American dream. (vii)

Not only does science education teach students specific science content, but it is also a good platform to teach problem solving and cooperation, among other life skills needed to be a successful nation.

In order for students to be prepared both in science content and science skills, they need to have a science education built upon best practices. In order for students to develop deep knowledge, they must immerse themselves in doing science and work collaboratively with others. (Zemelman, Daniels & Hyde, 2005) The chemical interactions unit addresses both of these needs. While the focus of the investigations is guided, students develop their own hypotheses, ways of testing their hypotheses, and develop their own explanations of the concepts studied. Students are always “doing” science. There is room for error and for further exploration based on student needs and personal inquiries. Students are always working with other through the experiences and as a class through discussions.

The subject matter of chemistry is directly related to our energy needs. Students study current events as they work through the unit, making connections between what they are learning and what is happening in the world around them. Beyond the chemistry content, the skills that develop through such a course are important for any student to develop to be successful.

This course is designed not only to develop a deep understanding of basic chemistry, but to also create a connection to issues affecting the world and build skills that will enable students to address global issues in the future. Students will be immersed in a hands-on science experience. Students will develop ideas about science through collaborative work with classmates. Students will discuss the connections between the course and current issues and will discuss what should be done to address these issues.

References

Carnegie Corporation of New York & Institute for Advanced Study, (2009). *The opportunity equation: transforming mathematics and science education for citizenship and the global economy*. New York: Carnegie Institute.

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Zemelman, S., Daniels, H., & Hyde, A. (2005). *Best practice: toda'ys standards for teaching & learning in america's schools*. (3rd ed., pp. 140-169). Portsmouth, NH: Heinemann.