

Real World Externships

Background

Real World Externships were developed as a solution to the often heard question of students, "When am I ever going to use this?" Teachers of secondary mathematics, science, and technology may not experience or become knowledgeable about the applications of their disciplines in industry through the course of standard teacher preparation. A bridge is needed to connect educators to the private sector. That is the impetus behind this program. Real World Externships provide educators with the experience to steer students to science, technology, engineering, and mathematics (STEM) related careers. This is accomplished by teachers working side-by-side with local businesses and organizations in or near the community they serve. What all Real World Externships business partners have in common are commitments to STEM education in their communities and the capacity to provide a teacher with inspiring, meaningful projects working in consultation with academic mentors through the Iowa Governor's STEM Advisory Council.

Role of the Business Host:

- Build a five to six-week hands-on, minds-on experience through which the teacher extern contributes to company operations by applying mathematics, science, and technology skills.
- Aid the teacher extern in documenting his/her experience and reflections on a weekly basis and permit the sharing of these reflections in full or in part. (*Externs must be mindful of proprietary information when composing reflections.*)

Real World Externships are a launch point for permanent business-school partnerships, and hosts may contribute to the application of the Externship in the classroom as requested by teacher externs. Hosts are also encouraged to cost-share by contributing to project operational expenses or by helping to pay the teacher's compensation.

Role of the Teacher Extern:

- Contribute talents, knowledge, and skills to business operations.
- Produce a written description of the Externship within the first week or two of the experience.
- Write a weekly blog detailing experiences—including reflections and responses to guiding questions offered by the Externship's mentor.
- Produce a two-page or longer paper stating the direct connections between the value of the Externship experience and his/her personal classroom teaching.
- Produce a detailed project-based learning experience that translates the summer Externship experience to the classroom.

Documented Results

Evaluation findings show that the Real World Externships project furthered the goal to increase teacher and student knowledge of STEM topics and careers in Iowa. In 2012-13, the program provided teachers an opportunity to experience real world application of their discipline and to translate their new work experience and career awareness to classroom lessons. This experience was intended to help teachers increase student interest in, and awareness of, STEM topics.

Business hosts were positive about their experiences with the Real World Externship program. Hosts' expectations to provide teachers with real world applications to take back to their classrooms were met by the end of the summer. Hosts realized mutual benefits from the program by gaining a teacher knowledge base and contributing to advancing and/or completing workplace projects. Business hosts planned to remain engaged with the teachers and contribute further to student learning by providing resources, such as supplies and equipment, guided tours, and assisting with or providing classroom lessons and presentations.

Teachers were also encouraged by the positive experience from the Externship program. By gaining real world experience to apply in the classroom, teachers became more knowledgeable of real world applications and more confident in their abilities to advise students about further education and careers in STEM. Teachers used the ideas and connections gained from the experience to make class activities more relevant and engaging, and reported increased student knowledge and interest in STEM careers and skills.

Teacher-externs' students maintained positive perceptions of STEM topics throughout the 2012-2013 school year. Students viewed STEM subjects as both important and helpful in the real world and found it important to achieve good grades in math and science. Between groups, differences most frequently occurred in student perceptions of engineering, and were most positive among males, middle school students, and students with teachers for the entire year. Middle school students, compared to all other groups, placed the most importance on getting good grades in math, and more frequently agreed that math will help them in the real world. STEM career interest increased across all groups from pre-test to post-test.

Potential Applications

A Real World Externship is similar to a traditional internship but with some distinct differences. The Externship host (i.e., business or organization) can expect a skilled, productive, independent professional with the ability to solve problems from the start of the experience. A thorough teacher application along with an initial meeting between the program coordinators, Externship host, and teacher, help to match the skills of the teacher with the requirements of the Externship host. The Externship itself can take many forms. Our most successful experiences have occurred when the extern has one or more focused projects that utilize skills and contribute to the operations of the business. We have also found that it is important the extern has the opportunity to interact with other professionals along the way, fostering a sense of teamwork and collaboration between the teacher and host employees.

Any Iowa secondary, public or private school, teacher of mathematics, science, or technology is eligible to apply. Selected externs earn up to two graduate credits and a stipend, as well as an experience which utilizes the latest real world applications specific to each extern's discipline. Extern hosts receive a unique opportunity to work with some of Iowa's most talented science, mathematics, and technology instructors who can offer uncommon expertise and save host sites time and money. In turn, Externships provide a launch point for lasting business-school partnerships that enhance classrooms, the workplace and the community at large.

For More Information

<http://www.iowastem.gov/imsep/http%3A/%252Fiowastem.gov/externships>