

Eco-STARS (Students, Teachers and Real Science): a partnership of higher education and K-12

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Fall 2006 marked the beginning of a Professional Development Schools partnership between the Prior Lake-Savage Area School District (ISD 719) and the College of St. Catherine Education Department. Through the generous support of the Jeffers Foundation, the Prior Lake-Savage Area Schools and the College of St. Catherine entered into an innovative partnership designed to:

- increase student learning associated with environmental education concepts (MN Comprehensive Assessments; testing of K-5 students, GLOBE evaluations/assessment, performance-based assessments),
- increase student skill levels (taking environmental action),
- increase student enthusiasm for science and develop skills and passion for responsible environmental stewardship,
- increase K-5 teachers' confidence and knowledge in environmental education,
- increase education majors' confidence and knowledge in environmental education, and
- develop a model of integrated environmental learning that can be used in other school districts in Minnesota and throughout the country.

The information that follows provides an overview of first-year activities and observations using an ALoU Chart (Advantages, Limitations and How to Overcome Them, Unique Potentials). The information does not provide a comprehensive picture of the project, and only highlights key elements found during year one. Individuals who wish more information should contact Cara Rieckenberg (crieckenberg@priorlake-savage.k12.mn.us or 952-226-0694) or Lori Maxfield (lmaxfield@stkate.edu or 651-690-8898).

ALoU Chart for EcoSTARS

Summary of the Project:

Faculty and Education majors from the College of St. Catherine (CSC) collaborated with the elementary schools of the Prior Lake-Savage Area School District (PLS) to develop a partnership to increase student learning in environmental education. This partnership followed the Professional Development Schools (PDS) model designed to create innovative partnerships formed between professional education programs and P-12 schools. PDS partnerships enhance P-12 student learning, improve teacher practice, create real connections between college faculty and schools, and help in the preparation of new teachers. So, while PDSs improve both the quality of teaching and student learning, they also provide support for professional learning in a real-world setting in which practice (teaching) takes place.

In this innovative partnership, PLS teachers and CSC Education faculty and majors received instruction in aspects of environmental education, such as the GLOBE (Global Learning and Observations to Benefit the Environment) program. GLOBE is a worldwide hands-on, K-12 school-based program that provides teachers and students opportunities to learn by taking scientifically valid measurements by conducting investigations in the areas of atmosphere, hydrology, soil, land cover/biology, earth as a system, and GPS. Additional aspects of GLOBE include reporting local data through the Internet, publishing research projects based on GLOBE data and protocols, creating maps and graphs on the free interactive Web site to analyze data sets, and collaborating with scientists and other GLOBE students around the world.

The major activities conducted in the partnership include training PLS teachers and CSC student in the use of GLOBE investigations (GPS, Atmosphere, Hydrology, and Soils); designing fieldwork experiences at the PLS elementary schools; incorporating CSC teaching assistants in the delivery of lessons at PLS elementary schools; and providing a Faculty-in-the-Field mentor to assist PLS teachers and CSC students. Additional supporting activities included the creation of an EcoSTARS Advisory Group, and the revision of CSC methods-level courses.

Advantages	Limitations (and How to Overcome Them)	Unique Features
<p>Prior Lake-Savage Area School District Administration:</p> <ul style="list-style-type: none"> • A working model of how to integrate environmental education into existing curriculum as well as implement to meet MDE standards • A staff with a stronger confidence level as well as more in-depth knowledge base of experiential environmental education lessons • Poised as a leader in the MN school system for integrating environmental education into all academic curricula and creating concerned citizens committed to ongoing environmental stewardship and care for the environment <p>Prior Lake-Savage Area School District Teachers:</p> <ul style="list-style-type: none"> • Significant staff development opportunities providing confidence and in-depth knowledge of experiential environmental education lessons • Lessons that integrate environmental education into existing academic curricula as well as MDE standards • Mentoring skills acquired through work with CSC students • Opportunities for Prior Lake-Savage Academic Academy credit through work with after school cohort • Opportunities for CEU credits through trainings • Opportunity to collaborate with Higher Education Faculty • Increased knowledge and exposure to environmental concepts and experiences • Decreased adult to student ratios in classrooms where CSC students taught • Opportunity to experience another teaching style 	<ul style="list-style-type: none"> • How might we overcome issues related to time constraints? <ul style="list-style-type: none"> ○ Schedule CSC pre-service students' visits and teaching only once a week for a six-week period (consecutive weeks) ○ Avoid scheduling of visits during critical times (e.g., school breaks, testing, workshops, programs) ○ Identify specific dates and time frames for the experiences • How might we increase debriefing opportunities for CSC students and PLS teachers? <ul style="list-style-type: none"> ○ Structure experiences as close to "open time" in the PLS teachers' schedule as possible (e.g., before school, during recess) • How might we increase CSC students' comfort levels with lesson content, development, and delivery? <ul style="list-style-type: none"> ○ Select specific content and provide training directly related to the content to be taught (e.g., GLOBE Protocols for Clouds and Soil Characterization) ○ Dedicate first two weeks of visit to structured observation of PLS teacher and student interactions ○ Provide a common lesson plan template that addresses elements of planning ○ Assign faculty mentors (methods-level faculty) to specific groups of CSC students based on content to be addressed ○ Create debriefing sessions with faculty mentors and CSC students to discuss elements of lesson development and delivery • How might we improve CSC 	<ul style="list-style-type: none"> • New ideas and energy were brought into the PLS classrooms by the CSC students and faculty • Opportunity for PLS teachers to observe their own students in a different perspective • PLS teacher skills were sharpened in order to teach/mentor preservice education students • Opportunity to interact with CSC faculty to improve PLS teacher instruction practices • Opportunity to see things in another teacher (CSC students and faculty) that PLS teachers wanted to replicate • Opportunity to see a lesson modeled • Exposure to additional resources (websites, activities, etc.) • Benefits of having another adult in the classroom to help answer questions, work with smaller groups of students and support learning • The experience allowed some CSC students to affirm their decisions to become a teacher • Increased accountability and credibility for all participants • Energized CSC faculty, improved methods-level course content and modeling • The creation of a project proposal – goals/objectives, outcomes, timelines, stakeholders, evaluation plan – allowed for successful implementation of experiences • A shared vision by all members of the partnership – Prior Lake-Savage School District, College of St. Catherine, Jeffers Foundation • The use and application of key concepts from Professional Development Schools (integration of professional and student learning through inquiry, placing students at the

<p>College of St. Catherine Faculty:</p> <ul style="list-style-type: none"> • An opportunity for methods-level faculty to bridge theory and practice with student experienced events, as well as to revise methods-level instruction to address the current realities found in actual classroom settings • Increased visibility of higher education faculty in P-12 classrooms as partners • Increased opportunities for collaboration with PLS classroom teachers <p>College of St. Catherine Students:</p> <ul style="list-style-type: none"> • Improved pre-service teachers' understanding of the "teaching and learning process" in a real-world context • Provision of a structured and focused fieldwork experience • An opportunity to receive "expert" mentoring from actual classroom teachers • Increase in confidence and knowledge in environmental education 	<p>students' classroom management knowledge and skill?</p> <ul style="list-style-type: none"> ○ Bring PLS teachers to campus to provide training session on Responsive Classroom ○ Require CSC students to incorporate Morning Meeting into lessons ○ Dedicate first two weeks of visit to structured observation of PLS teacher and student interactions ○ Restructure CSC teacher preparation curriculum that would place the classroom management earlier in the curriculum 	<p>center, learning in the context of practice, boundary spanning, blending of resources, blending of resources, expanded learning community, focus on standards, leveraging change) created a structure for success</p>
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