

Learning for the 21st Century: A Comprehensive Evaluation

by UCI Dept. of Education in Collaboration with Saint Margaret's Episcopal School

The last few decades have witnessed dramatic changes to our economy and society. Diffusion of information and communication and technology have radically transformed how we work, live, and play. In our network society and knowledge economy, the ability to marshal facts is no longer sufficient. Creativity, innovation, and the ability to make deep conceptual links between disciplines are now highly valued.

Schools have been one of the slowest institutions to change to meet the new requirements of the 21st century. Even in our best schools, the curriculum is too often a “mile-wide and an inch- deep,” as teachers strive to cover as much material as humanly possible in preparation for exams. Recently, St. Margaret's Episcopal School (SMES) in San Juan Capistrano, California has engaged in an ambitious school-wide reform effort to address these challenges. Already a high- performing school, SMES is not satisfied to have its students merely cover the curriculum. Rather, the school and its staff seek to instill the types of deep understanding and learning skills that will allow students to become important scientific, business, and civic leaders of the 21st century.

The reform effort at SMES draws on two overlapping frameworks: *21st Century Learning* and *Understanding by Design*. The former specifies the types of core subject content and learning skills—including innovation and thinking skills, information and communication skills, and interpersonal and self-directional skills--needed for high performance in today's world. The latter involves a mechanism for achieving these skills as well as the deep conceptual understanding that must accompany them in the natural sciences, social sciences, mathematics, humanities, and the arts. In the educational reform SMES is implementing, teaching is restructured to focus on the core principles of understanding that students are to achieve — not by *covering* the curriculum but *uncovering* it.

SMES offers outstanding conditions for attempting this reform. It has an administrative leadership with a strong commitment to educational excellence, and an experienced and talented teaching force. The students are, for the most part, highly capable, and the campus is very well equipped due to generous donor support. SMES parents are highly committed to their children's education and involved in the school. SMES thus represents an excellent laboratory for promoting a 21st century learning initiative, and evaluating the results of its implementation.

This proposal calls for a three-year comprehensive evaluation (from March 1, 2008 to February 28, 2011) of 21st century learning at SMES to be led by Mark Warschauer and Deborah Vandell, Professors of Education at UC Irvine. The evaluation will have two broad and complementary goals: (1) to provide formative and summative feedback to SMES as it carries out this important reform, (2) to capture lessons from this implementation that can be of value to educational practitioners and scholars interesting in improving teaching and learning.

Research Questions and Approach

(1) Teaching Practices: How are teachers changing their practices in the 21st century learning classroom? Do teacher practices appear consistent with the goals of 21st century learning and understanding by design? How could teaching be further improved to better align with the goals of these schoolwide reform efforts? What appear to be some of the most effective teaching practices that align with these goals?

(2) Learning Practices: How are learning practices changing in the new 21st century oriented classes? What are the experiences of individual learners in these classes? Do these practices seem consistent with the instructional goals? What forms of cognitive, behavioral, and affective engagement do students demonstrate? What kinds of skills do they appear to be learning? What kinds of understanding do they show, and how does their understanding change over the course of the year? Do the teachers appear to be successful in achieving their 21st century goals?

(3) Assessment: Are students achieving understanding of essential questions as evidenced by their ability to explain, interpret, apply, show perspective, empathize, and demonstrate self-knowledge? Are students achieving 21st century learning skills including problem-solving and innovation skills; information, media, and technology skills; and leadership and career skills? What are the best approaches to assess mastery of these understandings and skills?

(4) Professional Development and Reform: What is the best approach to further teaching for the 21st century at SMES and elsewhere? What appear to be the key factors (in the implementation model, social context, and individual participants' background and attitudes) that appear most favorable to carrying out a reform of this nature? Which aspects of the current model of professional development and reform appear to be most effective, and what might be improved.

To address these questions, a research team from UCI will visit SMES 1-2 times a week to observe classes; interview teachers, staff, and students; survey students; and collect school documents (curriculum plans, syllabi, lesson plans, student handouts, assessments, and examples of student work.). Principal focus will be given to classes that are implementing the new educational reforms.

Evaluation of student learning will be achieved through a combination of performance assessments and criterion-referenced assessments. The UCI research team will actively collaborate with SMES faculty and administration in designing assessments, drawing both on assessments already in use at SMES and state-of-the-art assessment approaches developed elsewhere for measuring understanding and learning skills. The goal will be to better assess learning that takes place at SMES, to provide systematic evidence that SMES students are achieving critical learning goals, and to develop and test assessment measures that can be used more broadly in educational reform efforts targeted at achieving deep understanding and 21st century learning.