**Abstract** Clemson University’s Project CIRCUIT (Collaboration, Inquiry, ReflecCtion, United with Instructional Technology) seeks to unify three powerful teacher preparation reform movements: inquiry-based learning, collaborative reflection on student work from classroom lessons, and technology-enhanced instruction (PT3). A support component of Project CIRCUIT is X-REPORT which is an e-notebookking tool for teacher and student reflections to enhance inquiry-based technology integrated education.

**Description of the Poster/Demonstration Session**

The poster session will reflect the work that is being conducted by Clemson University and Project CIRCUIT (Collaboration, Inquiry, ReflecCtion, United with Instructional Technology) to expand and unify teacher education by inquiry-based learning, collaborative reflection in lesson preparation, and technology-enhanced instruction. The poster will depict the major inquiry component of X-REPORT, which is an e-notebooking technology where students record electronically in “notebooks”, their science data and observations. With this process in place, a reflection component is integrated by the use of an Xperimental REflexion PORTal (X-Report) where students view each others’ e-notebook entries, reflect on those entries as well as their own, and respond. In addition, a rubric is used for evaluating students’ activity entries. In this presentation, we will share pretest data and also observational and anecdotal data about the X-Report’s usefulness, and the impact of its different delivery systems.

**Statement of the Problem**

The Project CIRCUIT strategy involves partnering with the South Carolina Systemic Science/Math Initiative to develop technology extensions of existing kit-based science and math instruction (K-6). Within this effort, students and faculty develop technology-based extensions that supplement the science kit curriculum while expanding its power. To support this project members (K-12 faculty, higher ed faculty, and pre-service teachers) help design and develop “technology kits” and use them as additions to the existing science and math kits. Out of this effort arose the strategy of developing a technology-aided methodology to facilitate the rapidly increasing use of notebooking in hands on science experiments. Since science or math inquiry specifically depends on students interacting and reflecting on their actual hands-on lab activity, pre-service teachers need to know how to advance and manage such activity in a way that is efficient and that promotes true inquiry and reflection. Knowing how to best use or do e-notebooking using a system such as X-Report, is a valuable technology tool for pre-service teachers. The use of this product by students and faculty demonstrates how pre-service students can be on the cutting edge of instructional technology innovation and deliver and support reflective inquiry-based instruction.

**Project Achievements**

After partnering with Leadership Assistance for Science Education Reform (LASER) and Schools Around the World (SAW) Academies, Project CIRCUIT is working with consortium members Clemson University, The Anderson-Oconee-Pickens Science/Math HUB, Pickens County Schools, and Anderson School District Five, to create and close the circuit of teacher preparation by uniting inquiry-based education, technology, and reflection. Currently CIRCUIT is piloting X-Report with five fourth grade classes. One class is using iPAQs, two classes are using Palms, and one class is using desktops. The usefulness as well as the technology interface will be evaluated in this year’s pilot study.
Significance of Project

One strategy in CIRCUIT is the systematic harnessing of the reflective / collaborative professional development model of S.C. Schools Around the World to support the deployment of inquiry-based instruction that capitalizes on the benefits offered by technology. This resulting hybrid methodology insures that:

a) Technology is used strategically and enhances successful instruction;

b) Success is determined and instruction is revised based on assessing and analyzing actual student work on a district, national and international level;

c) Instruction involves pre-service and master teachers in actively systematically constructing and evaluating their own academic content, pedagogy, expectations, and learning theory.

Project CIRCUIT is assisting in accomplishing the above strategies by using the latest hand-held technology (HP’s iPAQ & Palm), to infuse technology in a way that advances both inquiry and reflection in an elementary science classroom. With this process in place, the reflection component, EXperimental REflection PORTal (X-Report), is integrated for student scientific notebooking and inquiry based observations.