

Backpacking Across the Digital Divide: Supporting Pre-Service Teachers in Bringing Emerging Technologies to Rural Schools

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This roundtable session presents the in-process work of university faculty and pre-service teachers involved in a one-year research project on enriching the student teaching experience. Our project, Backpacking Across the Digital Divide, seeks to enhance the professional development of a selected number of student teachers in technology-poor rural field placement locations with access to reliable and emerging classroom technology equipment and instruction for use during their student teaching experiences. Lack of access to 21st century technology tools in rural field placements severely handicaps a university student teacher's ability to develop the necessary skills required of a teacher today.

Definition of Terms:

- Digital Divide is the gap between schools with access to technology and schools with no access; geography, socioeconomic status, and race are among the causes cited as leading to the digital divide.
- Digital Backpack, for the purposes of this project, refers to a backpack equipped with readily accessible technology tools which will help bridge the digital divide.

In acknowledging the geographical causes of the digital divide for individuals living in rural areas, last year President Obama announced the National Wireless Initiative with the goal of bringing high-speed Internet to all rural areas in the next five years (Williams, 2012). However, what is not widely acknowledged is the divide that exists in rural K-12 schools. For these schools, lack of Internet access is almost secondary to the lack of technology hardware. The gap between the K-12 technology "haves" and the "have nots" is staggering. Our experience has shown many schools are 21st century teaching and learning showcases where teachers and students are equipped with leading-edge technology tools that support integrating technology into teaching and learning to achieve high academic standards, thereby ensuring all students are able to meet the demands of an increasingly technologically literate workforce.

The foundation for our project gains inspiration from the work of Dr. Doug Brooks, creator of Project BackPac at Miami University of Ohio. In communication with Dr. Brooks, he reports, "Our data suggests that when the student teacher shows up with all this equipment they are instant stars. They show their mentors how to use it. They use it. They plan lessons knowing they control access to it. They practice how

to use it in their own apartments. There is less co-dependence. The technology culture of the classroom is accelerated and the technology integration skills of the student teacher are enhanced. Their capacity to transform the classroom they are placed in is accelerated.”

Using the TPACK survey (Technology, Pedagogy, and Content Knowledge – Schmidt, D.A., Baran, E., Thompson, A.D., Koehler, M.J., Mishra, P. & Shin, T., 2009) and the reflective blog posts, we anticipate an increase in knowledge and application of technology by the pre-service teachers working with the digital backpacks. We also anticipate similar growth among faculty action team members who will be teaching and learning simultaneously with their students.

Students who successfully complete all the project requirements will be allowed to retain possession of their iPad 3. In this way, we continue to support technology integration within school districts as we send a future teacher into a teaching position already equipped with 21st century leading-edge technology and the knowledge and skills necessary to use this equipment effectively.

The following is a description of the activities that are part of our project:

- Form Action Teams at four rural centers – branches of the main university campus – consisting of one lead faculty members and additional full-time faculty and/or adjunct instructors responsible for education pre-service teachers.
- Review and select project participants from the project application form distributed to second semester junior year education students at the four participating centers.
- Administer TPACK survey at the beginning, middle, and end of the first year.
- Provide participating pre-service teachers with equipped digital backpacks for one academic year. An additional three equipped backpacks will remain at three of the rural centers to enable instructors to model the use of technology tools within the pre-service teachers’ coursework. Each backpack contains: one iPad 3 tablet, a document camera, a portable projector, an interactive whiteboard system (Mimio Teach), portable speakers, and VGA adaptors for the iPad 3.
- Form cluster teams of three participating student teachers placed at the same schools to complete field experience requirements during the fall and spring semesters thereby providing an immediate learning community.
- Student requirements for participation in Backpacking Across the Digital Divide:
 - Attend monthly full-day technology trainings, held at the most centrally-located center, led by technology trainers and student project participants.
 - Actively participate in reflective, collaborative blog postings, along with faculty, and respond/react to others’ comments.

The immediate impact of our project has been a student teacher's access to emerging technology tools during a critical period of their professional development. The short-term impact we anticipate will be the development of advanced technology literacy with immediate student instructional applications. The longer-term impact will be students will graduate from our university with entry-level, value-added technology profiles to improve k-12 student performance. The longest-term impact will be technology leadership by graduates from a program with a distinctive, integrated technology component.

At this roundtable we will be presenting our in-progress work begun in August 2012. We will present an overview of the project and results of our research thus far. The format of the roundtable will provide us the opportunity to engage in collaborative conversations with others who face similar struggles such as ours in bridging the technology gap.