East Dakota Educational Cooperative

ARRA case studies

Background

The *American Recovery and Reinvestment Act of 2009* (ARRA) included a $650 million allocation in ESEA Title II, Part D, commonly referred to as the *Enhancing Education through Technology program* (EETT). This case study was prepared by the State Educational Technology Directors Association (SETDA) – the principal association representing the technology leadership of state and territorial departments of education – to provide an example of ARRA funds working at the district and classroom level to create effective, viable, and robust reform in education and improving the way teachers teach and students learn.

South Dakota's EETT Competitive Grants

South Dakota's ARRA EETT competitive grant awards encouraged the effective integration of technology through high quality professional development models. Focus was placed on 21st century skills instruction and improved student academic achievement. The four main goals of the project were to increase student achievement through the use of technology; build capacity for 21st century skills in staff and students; increase the level of technology integration among staff and students; and advance development of system wide integration programs

Master Teacher Academy
East Dakota Educational Cooperative, South Dakota
February 2010-July 2011

The Master Teacher Academy educated lead teachers and administrators to implement and share 21st century skills. Teachers and administrators engaged in focused training both face-to-face and online, and they received support in the classroom.

Demographics

South Dakota is divided into 7 educational service agencies serving approximately 120,000 students in 703 schools. The Education Service Agencies in South Dakota began as a way to better deliver services to schools. East Dakota Educational Cooperative services the school districts of Brandon, Lennox, and West Central in eastern South Dakota and is part of the Educational Service Agency, Region 2 (ESA2). This grant was developed in Region 2 but teachers statewide were invited to participate in the professional development program.

Project Description

ARRA EETT Grant Details	
Grant Focus	Professional Learning Communities and Project-Based Collaborative Learning
Beginning/End Date of Grant	February 1, 2010-July 30, 2011
Locale	Rural
Funding	$460,878
Grade Level (s)	K-12
Number of Teachers Impacted	134
Number of Administrators Impacted	20
Number of Students Impacted	1,810

In South Dakota, teachers and all high school students had access to laptops and the infrastructure for wireless access. However, the teachers were untrained in fully utilizing the devices and web-based tools, and hesitant to explore the educational uses for the emerging technologies. Therefore, an increased need existed to provide professional development opportunities to improve teaching and the effective integration of technology in the K-12 classroom. Centralized professional development opportunities were not readily accessible due to geography, travel constraints, and program availability within the vast state. Teachers needed more opportunities to collaborate, and school districts needed to create learners equipped with skills necessary to excel in a 21st century world. The purpose of this project was to educate lead teachers and administrators to recognize and implement 21st century skills through classroom lessons. Master Teacher Academy originated in 2008 through a combination of state and federal funding. From 2008-2010, 30 teachers participated in a variety of professional development opportunities and created a bank of lesson plans focusing on 21st century skills. At the onset of the ARRA EETT funding in June 2010, a second cohort of 60 teachers was recruited. The program was refined using feedback from the original cohort and included face-to-face meetings, coaching, and small group work. A third cohort was established in April 2011 and provided a condensed professional development program concluding in June of 2011.

Project Implementation

In the spring of 2010, Education Service Agency, Region 2 accepted applications for the initial teacher training. Sixty teachers from across the state were chosen for the initial five-day training in June 2010. Gathering at the University of Sioux Falls, teachers met former members of the Master Teacher Academy, who shared their experiences. They also received

> The Master Teacher Academy helped me grow as a teacher, mentor, and technology user. I have more confidence to do things I would have never tried.
> -Master Teacher Academy Participant

demonstrations in different technologies, including Moodle and Wikispaces. Instructional sessions included topics such as global awareness and project-based learning. Teachers also participated in a model, project-based lesson and role-played as students to experience this style of learning first hand. During the 2010-2011 school year, teacher participants engaged in 15 hours of online training sessions in groups of 8 led by the Instructional Coach. This training focused on higher order thinking skills, assessment, and integrating technology into lessons. Two coaches worked with this cohort and visited each classroom at least twice to provide support. Teachers worked throughout the year to deepen their understanding of 21st century skills and effectively use appropriate technologies. Teachers also coached and offered training in their schools to share expertise and mentor colleagues.

In the spring of 2011, an additional 70 teachers were selected to attend a Project-Based Learning Academy, taught by the Buck Institute for Education (BIE). The teachers wrote lessons, implemented them, and gathered in June to share their successes and challenges.

Classroom Examples

- In one fifth grade class, in typical practice, students began the year by recycling paper in the classroom. The classroom teacher designed a project-based lesson inspiring students to research, investigate, and take action on expanding their recycling efforts. With the teacher's guidance, students researched online the cost of recycling materials and collection containers and began to recycle products in the lunchroom and at school events. The students interviewed recycling experts and created a video of their trip to the landfill about the importance of preserving the environment by recycling. Videos were shared with students and the PTA in their school. Their project culminated with an organized process of recycling paper throughout the school. The video and PTA presentation was the final event as the school year concluded.
- Among other expectations, fifth grade math students solve one- and two-step problems using addition, subtraction, multiplication, and division of whole numbers, use appropriate units with which to measure length, weight, and capacity, and solve problems involving perimeter, area, capacity, and volume. A typical assignment involved math work from the textbook. With the support of the Master Teacher Academy, a project-based lesson involving the redesign of the playground offered real world, inspirational use of math concepts. Students studied and measured their current playground, then brainstormed ideas for a new playground. On paper, they drew their concept to scale. Using the internet, students researched the cost of making playground equipment and materials. The students also interviewed community members to determine cost and ensure they met all municipal and Americans with Disabilities laws. The students created written and oral presentations for members of the school board. Some students used Microsoft PowerPoint; others used video for their presentations. They also used Microsoft Excel to build their budgets. The school board agreed to fund some of the requests if they prioritized needs and presented recommendations to the board. Technology was used seamlessly throughout this project as students gathered information and

resources to design a playground and make their presentation. The teacher was there to guide the process but the students were leaders in their learning. In this class, students gave up their recess time to complete the project.

Evaluating Effectiveness

> Project-based learning provides students with a "sense of accomplishment" rather than let's just get the assignment finished. Students really dig into their thinking process and become more metacognitively aware.
> - Master Teacher Academy Participant

This initiative resulted in multiple benefits for both teachers and students. Students benefitted from an engaging 21st century learning environment. Data collection concluded that the integration of technology helped to increase higher order thinking skills and student engagement. Based upon online collaborative community responses, comments, and classroom visits, Master Teacher Academy participants indicated an increased awareness of higher order thinking skills (critical thinking, reflection, authentic learning) from 7% at the beginning of the project to 92% at the end of the project. In addition, based upon online collaborative community responses, comments, and classroom visits, Master Teacher Academy participants indicated an increased awareness in incorporating 21st century skills (collaboration, communication, creativity) in teaching in a current context from 9% at the beginning of the project to 100% at the end of the project. Based upon a pre- and post-survey developed by the South Dakota State Department of Education, 40 of the 54 teachers surveyed increased their understanding of the 21st century skills and tools, 13 participants' understanding remained the same, and one teacher reported that his/her understanding of 21st century skills and tools declined.

Of the schools participating in the year-long Master Teacher Academy, cohort 2, 10 schools were identified for school improvement in 2010. Three of these schools made Adequate Yearly Progress (AYP) and are no longer identified for improvement, a decrease of 12%. As a result of this program, 136 teachers became teacher leaders within their schools in regard to 21st century teaching and project-based learning.

Program Data

- Master Teacher Academy participants indicated an increased awareness of higher order thinking skills (critical thinking, reflection, authentic learning) from 7% at the beginning of the project to 92% at the end of the project.
- Master Teacher Academy participants indicated an increased awareness in incorporating 21st century skills (collaboration, communication, creativity) in teaching in a current context from 9% at the beginning of the project to 100% at the end of the project.

Additional data is available in the full *EETT Project Narrative* accessible below in the "Resources" section.

Moving Forward

The administrators made the commitment to ensure that teachers have the local support to continue to improve the curriculum through project-based learning and professional development opportunities. The teachers in each of the districts expressed the desire to change their teaching styles after seeing the engagement of students.

The success of the Master Teacher Academy is attributed to the collaborative and supportive learning environment. The design of the program provided support for participants throughout the year. Teachers were continually encouraged in their efforts, including sharing and learning from each other.

Resources

South Dakota Master Teacher Academy
http://sdmasterteachers.wikispaces.com/

EETT Project Narrative: Outline. South Dakota Stimulating Innovation - ARRA. Program Funds Made Available Under American Recovery and Reinvestment Act of 2009
http://tinyurl.com/7d3tzmg

East Dakota Educational Cooperative
http://edec.org/

South Dakota Department of Education
http://doe.sd.gov/

SETDA ARRA Information and Resources
http://setda.org/web/guest/ARRAresources