THE REGIONAL EDUCATIONAL TECHNOLOGY ASSISTANCE PROGRAM

CREATING TECHNOLOGY LEADERS THROUGH PROFESSIONAL DEVELOPMENT

CENTER FOR CHILDREN & TECHNOLOGY

CCT REPORTS

JUNE 17 - 19, 2002

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A PAPER PRESENTED AT THE
NATIONAL EDUCATIONAL COMPUTING CONFERENCE (NECC)
SAN ANTONIO, TX, 2002

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ABSTRACT

The Regional Educational Technology Assistance (RETA) program is a teacher-driven professional development initiative that has been educating New Mexico teachers in the use of learning technologies for the past four years. Since its inception the RETA project has directly served thousands of teachers in New Mexico. An important characteristic of the RETA program is its use of teachers to train other teachers. Since teacher-instructors understand classroom culture and the demands of teaching, their guidance is often more relevant and credible to teacher-participants. In this paper, we discuss the impact of the RETA model on the collegial behaviors and changing leadership roles of its participants and instructors. We will present findings which indicate that, as a result of their involvement in RETA's ongoing professional development workshops, participants and instructors: a) increase their collaboration in technology-related matters with other teachers in their schools and, b) assume leadership positions in their schools and communities.

Keywords: Professional Development, Technology, Leadership, Collaboration

INTRODUCTION

The Regional Educational Assistance (RETA) program provides professional development in technology for teachers and administrators in all public, private and federally funded schools in New Mexico, focusing particularly on the needs of teachers and students in high poverty schools. The student population in New Mexico presents a unique set of educational challenges, with a 44% high school dropout rate, 28% of all students living in poverty, and 48% of students at the 4th grade level scoring below the basic reading level (Kids Count, 2001). In addition, New Mexico schools serve a diverse linguistic population that includes a large percentage of Spanish speaking students as well as students from many Native American pueblos and communities for whom English is a second language. New Mexico children are in great need of an education that prepares them to fulfill their potential and, ultimately, secure and maintain productive employment in the 21st century. In order for this to occur, professional development, access to current information and resources, and practical hands-on training in how to use new and available resources is essential.

The teachers involved in the RETA program represent over two-thirds of the state's public school districts and a number of Bureau of Indian Affairs schools, including Northern and Southern Pueblo schools and Eastern and Western Navajo schools. The program, however, is not only concerned with reaching a diverse group of teachers, it is also seeks to build technical capacity and leadership among educators across the state. The professional development literature suggests that sustained change in teacher practice is most likely to occur when teachers create support networks with peers (Norton & Gonzales, 1998; McKenzie, 1999). Building communities of learners and allowing teachers to network and share ideas with their peers helps teachers to open their isolated classrooms and try out new teaching models (Reil & Fulton, 1998). The major thrust of the RETA project is to combine an exemplary, technology-rich, standards-based curriculum with model pedagogy and a supportive learning network to positively impact the skills and abilities of teacher participants. RETA employs a proven professional development model (Norton and Gonzales, 1998) to ensure that schools have the ongoing capacity to sustain and support the full integration of technology into classroom practice.

Methods

In order to evaluate RETA's progress in providing professional development opportunities to educators around the state, we employed multiple methods for gathering information about RETA participants and instructors. The information provided here analyzes the evaluation findings during the 2000/01 academic year for the RETA program. The RETA evaluation methods include:

Pre- and Post-Surveys: Teacher participants and workshop instructors completed surveys posted on the RETA website during the first RETA workshop they attended and then again at the final workshop, near the end of the school year. The data were automatically compiled in an electronic database. The instruments collect demographic data from participants as well as information about computer use, classroom practices, and attitudes toward technology. Open-ended questions on the post-survey asked about the aspects of RETA workshops that participants find most useful, the things that teachers do in their classes as a result of what they learned in RETA, and participants' recommendations for improving the program. Seven-hundred and four people completed at least one of the two surveys.

Participant Workshop Evaluation: This questionnaire was mailed directly to participants' homes following the final RETA workshop. Teachers were provided with a self-addressed, stamped envelope and instructed to return the evaluation form. Eight hundred and fifty–six surveys were mailed out and 253 were returned. We believe that two factors contributed to this low return rate. First, teachers were asked to complete this survey just as the school year was ending and many teachers state that this is not a good time to do additional work. The second reason is that RETA teachers are asked to complete a participant evaluation at the close of each workshop in addition to the pre- and post-evaluation, and many teachers felt that this was too much paperwork.

The instrument collected data on participant demographics and asked participants to give feedback on the quality of instruction and workshop content. Participants were also asked whether they provided technology instruction for teachers, administrators or parents in their schools, communities or outside of their communities, and if so, how many people received instruction from them. The sample of participants who responded to this questionnaire differed somewhat from the sample who completed the pre- and post-survey.

Instructor Self-Assessments: This instrument was administered through the RETA website. An email message was sent to instructors on the RETA listserv asking them to complete the questionnaire. This instrument, which parallels the Participant Workshop Evaluation, asks instructors to assess their own skills and knowledge, comment on their workshop implementation and suggest ways to improve the project. Instructors are also asked to identify other technology activities with which they are affiliated as instructors or trainers as a result of their experience with RETA.

Workshop Observations: During the 2000/01 school year, evaluators from CCT attended and observed four workshops led by four different RETA instructor teams. These workshops were held in different regions of the state—southern, western, central and northern New Mexico. Observations focused on both instructor and participant behaviors. For instance, we noted how the instructors organized the session, how they adapted the RETA curriculum to fit the needs of their participants, and how they interacted with the participants and each other.

Classroom Observations: During the fall and spring of 2000/01, researchers from CCT visited and observed activities in the classrooms of five RETA instructors. Classroom observations focused on student demographics, students' and teachers' activities with technology, and general teaching practices. For instance, researchers recorded if and how students collaborated in the classroom as well as how they interacted with computers. There was a particular focus on recording how technology was integrated into the overall lesson plan, whether the use of technology was a means to an educational end or simply an end in itself.

RETA Instructor Interviews: Weconducted a variety of interviews with RETA instructors. First, after observing RETA workshops, we held structured debriefing sessions with the instructor pairs in which we asked them to comment on the workshop—how they chose the topic, how they prepared for the session, the feedback they received from participants. Because both instructors participated each was able to feed off what the other was saying, and they could clarify or expand upon the other's statements. Second, we conducted individual interviews with instructors at their schools either before or after the classroom observations. In these interviews we asked instructors to talk more generally about their experience in RETA, and describe the impact their involvement with RETA has had on their professional lives. Third, we interviewed a number of both new and long-term instructors at the 2001 instructor orientation. Again, instructors were asked to describe their experience with RETA and its impact on their professional lives.

Leadership of RETA Participants

RETA is helping to establish a cadre of technology leaders throughout the state of New Mexico. The data gathered over the 2000/01 academic year indicated that teachers who participate in RETA become active in their school and district technology committees, help the districts make decisions about technology purchases, help write grant proposals to acquire equipment and networking services, and provide technology instruction to their colleagues, administrators and parents. These efforts are especially valuable in schools and communities in remote areas of the state, where technical expertise and leadership are sorely lacking.

When asked in the participant evaluation whether they provided technology instruction to members of their communities, 54% of participants responded that they had. Of those who took on professional development activities, 78% provided training to peers in their schools, 12% offered training to parents, 11% offered training to school administrators. In total this sample of participants alone provided technology instruction for close to 1,000 additional people. If the same rate of out-

reach holds true for the entire group of RETA workshop participants (890), then it's possible that, through the actions of workshop participants, the RETA program was able to reach an additional 3,500 people in the state of New Mexico.

Participants who had taken RETA at least once before were more likely to offer technology instruction to other teachers, administrators or parents than those who had taken RETA for the first time this year. Seventy percent of repeat participants said they gave technology instruction to others, while 47% of first-time RETA participants offered instruction. This finding suggests that the more involved participants become with RETA the more they assume responsibility for taking technology leadership positions in their schools and communities.

In addition to providing formal instruction to colleagues and others in their schools and districts, we also asked teachers in the pre- and post-surveys to tell us about how their involvement with technology affected the kind of informal technology support and encouragement they provide to their peers in their daily lives at schools (See Tables 24-27). A matched pair analysis of the pre- and post-survey data show that, after participating in RETA, teachers provide technology assistance to their colleagues more frequently (n=345).

How often RETA participants assist other teachers with:

Table 24: Hardware problems

	PERCENT (PRE) POST
Daily or Weekly	(25.4) 28.0
Monthly	(10.2) 21.2
2-3 times per year	(29.7) 27.9
Never	(34.7) 22.9

Table 25: Software problems

	PERCENT (PRE) POST
Daily or Weekly	(26.6) 29.0
Monthly	(9.6) 14.7
2-3 times per year	(30.7) 35.8
Never	(33.0) 20.5

Table 26: Designing curriculum that uses computers

	PERCENT (PRE) POST
Daily or Weekly	(13.5) 17.3
Monthly	(17.0) 23.7
2-3 times per year	(27.6) 31.0
Never	(41.9) 28.1

Table 27: Discussing issues related to computers

	PERCENT (PRE) POST
Daily or Weekly	(44.2) 57.3
Monthly	(19.4) 22.1
2-3 times per year	(19.6) 13.8
Never	(16.7) 6.8

Comments offered by participants in their post-surveys also indicate that RETA participants are sharing what they are learning with their peers and school communities. "I taught other teachers how to use different programs," stated one participant. "I have shared many of my ideas with other teachers and they have used them in their classrooms," wrote another. A third participant engaged in more formal instruction at her school. "I have taught a Saturday class to our staff," she said, "and I used Marco Polo [an educational web resource] and taught a session of that to our staff."

In our workshop observations we witnessed instructors encouraging participants to become instructors in their own schools. At one workshop in western New Mexico, instructors provided participants with notebooks that outline ideas for giving workshops to their colleagues. During the morning sharing session, after the teachers talked about how they used technology in their classrooms, one of the instructors asked, "Did anyone plan ways to share what you learned with the staff at your school?" One participant replied, "I promised a kindergarten teacher I would help her figure out how to use her computer."

"As RETA participants you should be technology leaders in your schools," the instructor advised. Then she told the participants how intimidated she used to be by technology. "Now I know how to take a computer apart," she said. "I added memory to my computer last year. I wouldn't have felt competent to do this a few years ago, but now I can." And now, along with being a classroom teacher, she is also the technology coordinator for the school.

Leadership of RETA Instructors

One of the ways that many RETA participants have evolved into technology leaders is by becoming RETA instructors. The majority of the 110 RETA instructors were once workshop participants who were recruited by their own instructors. RETA instructors are a group of motivated individuals, many of whom may have already had an interest in, if not necessarily expertise in technology before they participated in RETA. However, in most cases RETA instructors did not hold leadership positions in their school before becoming involved with RETA. The RETA program has given these individuals an organized, effective way to channel their interests and make a significant impact on the educational landscape of New Mexico.

As a group, RETA instructors are now quite active within their schools with regard to technology assistance. During interviews and classroom observations, we noted that RETA instructors are often called on informally to assist with technical issues, or to serve on committees that assist in technology planning. The data below, which come from an analysis of the pre-survey data, support these observations (n=84).

How often RETA instructors assist other teachers with:

Hardware problems

Daily or Weekly: 56%
Monthly: 20%
Less than once a month: 12%
Never: 12%

Software problems

Daily or Weekly: 56%
Monthly: 17%
Less than once a month: 18%
Never: 9%

Designing curriculum that uses computers

Daily or Weekly: 34%
Monthly: 28%
Less than once a month: 21%
Never: 16%

Discussing issues related to computers

Daily or Weekly: 75%
Monthly: 16%
Less than once a month: 6%
Never: 3%

All of the RETA instructors who served as the subjects of our workshop and classroom observations have assumed some kind of technology leadership role in their schools or districts. One has become a technology coordinator in her building. She noted that in previous years she had acted as a de facto technology coordinator, but this was the first year she has gotten paid to take on these responsibilities, which include staying after school to work on the computers, and trouble-shooting for other teachers in the school. Along with being a classroom teacher, one of the other instructors we observed is also in charge of the computer lab in her school, which has 27 computers in it. She also provides technology professional development for staff members in her school district. Her partner instructor is on the technology committee in his school, and has written grants that have brought technology funding to his school. Another instructor runs a media program in her middle school. Her students make use of multiple kinds of technology, and even produce daily news broadcasts for the school. Other instructors spoke to us about trouble-shooting for colleagues.

People we spoke to at the Professional Development for RETA Instructors in June 2001 talked about the impact they have been able to have in their schools and districts since becoming involved with RETA. "My administration asks for my advice on things like software purchases," one instructor informed us. "Because I brought so much from what I've learned through RETA, they see the effort I'm making has had a positive effect." Another instructor noted, "It's allowed me to help my school find a better way of utilizing all of the technology we have, which has prompted me to learn more about the software applications and networking."

Other instructors spoke of new responsibilities they were assuming since taking part in RETA.

> *"I'm now the library technology coordinator for my school. Because of RETA I've made contact with a lot of people, formed partnerships. That's brought a lot to my school that we wouldn't have had. I was the coordinator for other teachers at my school to attend RETA classes. We're in a BIA [Bureau of Indian Affairs] school, not a public school. We're not always as informed about programs that are available. So I was the link. Almost everyone in the school has attended the workshops."*

> *"We had consultants in school who wanted me to take over the role of technology and curriculum coordinator five years ago and I didn't feel I could, but now I'm more confident and have taken on that responsibility."*

"My school put me in charge of the technology committee and the accreditation committee because I was the only teacher who could make graphs and use databases. I help with grants a little bit. I'm writing the technology plan and I ended up in charge of the GATE [Gifted and Talented Education] program. You can get yourself in trouble."

"My role in school has changed from computer instructor to technology coordinator because of RETA. It involves training teachers. I have trained teachers before but I'm much more efficient now because of the way RETA modules are structured, and because we can practice them."

"It's my responsibility to go out and share what I know. Administrators come to me and ask me to help out, especially with things that are networked. People come to me for trouble-shooting. Each school in the district has a technology representative and I will be that next year. I wanted to take that job when I felt prepared. Eventually what I would like to do is to be a consultant for the schools, teaching teachers how to use technology. The tech rep position may help me do that."

Professional Opportunities and Personal Growth

Along with moving into positions of leadership in their schools, RETA instructors also report that their involvement in the program has given them the confidence and knowledge to develop both professionally and personally. On the instructor self-assessment questionnaire, 74% of RETA instructors indicated that they gave non-RETA workshops over the year. These include Marco Polo (an educational website developed by MCI/Worldcom Foundation), Intel's *Teach to the Future,* Cisco Systems Network training, workshops associated with RETA Regional Resource Centers, and workshops associated with consortia in which RETA is a participant.

"RETA has been like a career change for me," said one instructor. "I've been teaching for 20 years in social studies and I was ready to move on. I wanted something different. Now I'm getting my technology endorsement and looking to go full time into teaching technology classes." An instructor who left teaching to start his own business observed that RETA "allows me to still be involved in the education system in a peripheral role." Another instructor is pursuing a graduate degree. "RETA is opening doors for me. It encouraged me to enter into the master's program. The people are great to work with, no stinginess; everyone is willing to share."

Some instructors mentioned that their experience with RETA has made them better teachers. One of the workshop leaders we observed said that, since becoming a RETA instructor, she has gained more confidence as a teacher, because in the RETA workshops she gets more feedback on her lessons. Teachers are more willing than students to critique instructional methods. Another instructor argued that providing assistance has helped her learn more about technology. "I help teachers in my own school and in my district a lot, so now I know how to do a lot more. It's helped me with my skills. I used to help them out a little before but I do more now."

Not only has RETA enabled some instructors to advance professionally, but some of the instructors we interviewed also mentioned that RETA has had a positive impact on their personal lives. One instructor observed that his participation in RETA "makes my brain grow; it hurts the cobwebs." Another instructor stated, "I learn every day and I love that. I have a 7-year-old boy and I do a lot with him. He's on the Internet. It's personally rewarding." Still another instructor said that he welcomes the opportunity to pursue new interests. "Change helps, learning new stuff, new software, new ways to utilize software. I can take those back to students and can use them in the classroom. It helps me stay fresh. The personal growth is worth losing weekends. I'd rather be doing this than a lot of other things. RETA is my hobby."

Support of Instructors

One of RETA's main goals is to create a professional network of technology educators and advocates across the state. In order to create such a network, the RETA program understands that it needs to treat its participating teachers as professionals. This means providing them with the practical support that allows them to do their jobs. In fact, one of the main reasons instructors give for their dedication to RETA is the fact that they and their participants feel supported by the program staff. "If the participant experience hadn't been good I wouldn't have ended up being an instructor," said one man. "[The project director] is extremely supportive, and she has a dedicated staff. There is nothing we need that we can't get in terms of support."

One of the instructors whose workshop we observed mentioned that often teachers are not treated professionally by programs they become involved in. "[The RETA project director]," however, "treats her people well." Another instructor who works in a Native American pueblo, contrasted RETA with another large professional development program that trains teachers to become master teachers who provide technology training to peers. This other program gives master teachers funding for equipment in their classrooms, but only if they train a certain number of teachers. "Teachers from Indian communities who do [the other program] don't get all the perks because we can't have as high participation. There's just not enough people. So they're trying to bring in Native Americans but they refuse to give them money and equipment, all because it's numbers driven. It's widening the technology gap."

The RETA program, on the other hand, provides support to all of its instructors, regardless of where they teach or how many participants they have. RETA instructors are "given software and tools, the lessons and handouts. RETA is great about providing that and giving instructors what they need—good pay, a laptop, equipment. The participants can really work if they have the tools to work with. That, combined with a highly competent program staff, [the RETA project director] manages that very well." One instructor said she will continue doing RETA as long as she can, because RETA pays better than other professional development programs she knows of, and she gets a laptop and software for doing it as well. "The fringe benefits with RETA are great," said another instructor. "The software, sharing with other teachers, the laptops. It's amazing."

Providing instructors with laptops and software helps them be better prepared to teach their workshops, which are often held in facilities that instructors are not familiar with and do not have access to before the day of the workshop. "It was a pain before (we got the laptops) because we had to load software on lab computers at the workshops. Now I can load it on my own computer so there's no surprises. I get to play with the software before I go."

In addition to equipment, software and pay, instructors mentioned that they felt supported by the instructor training that RETA provides, and the fact that the program staff listens to the feedback from instructors and makes improvements in the program in response to that feedback. "Part of RETA is top down and part is grass-roots. Having the debriefing as a part of the instructor orientations is great. A lot of programs wouldn't take time to find out what the problems are and if they did they wouldn't do anything about them. Things have changed because of debriefings and not just the formal ones but those that take place on a weekly basis." One of the changes that the RETA program made in response to instructor feedback was to give the instructors more time to practice the workshop modules at the annual Instructor Orientation. "The training is much better," said one instructor. Last year at the orientation we had to come up with workshop modules and then just go out and do them. This fall we took the time to go through every module." A number of instructors we interviewed agreed that this format helped them to feel more confident teaching the workshops.

In order to create new curriculum modules and prepare RETA instructors to teach those modules, the RETA program holds two instructor training and development sessions each year. In the June Professional Development session, instructors are introduced to different kinds of software and resources in hands-on workshop sessions. Instructors also form groups to work on creating curriculum modules over the summer for use in RETA workshops during the coming year. In the Instructor Orientation meeting in September RETA instructors met again for more training on software applications and to learn about and practice using these new modules.

Not only do these professional development and orientation sessions help RETA instructors gain the skills and confidence to teach the workshops, they also offer instructors the opportunity to connect with their RETA colleagues across the state. Many RETA instructors mentioned that they appreciated this opportunity to get to know their peers and learn from them. In order to sustain these connections, RETA maintains a listserv for instructors so that they can continue to communicate with each other over the year. This listserv is actively used by many instructors for exchanging information about educational Internet resources, grant opportunities, RETA news and political advocacy opportunities. As one instructor noted, "RETA is about providing teachers with the knowledge that helps them integrate technology into curriculum, and building a network of educated technology people." By providing opportunities for instructors to meet, exchange ideas and communicate throughout the year, RETA has helped support the development of a network of informed technology education professionals across the state of New Mexico.

CONCLUSION

The RETA model of technology professional development, which not only has teachers teaching teachers, but which encourages both instructors and participants to become technology leaders in their local communities, is particularly useful for meeting the unique educational technology needs of in a state such as New Mexico. Many communities in New Mexico are quite rural and isolated, and there is no pool of technical expertise in the community from which schools can draw when they are in need of assistance. In such circumstances, schools must be resourceful and rely on their own faculty and staff for technical support and leadership. The RETA model encourages participants to share their skills as they learn them, to see that an integral part of learning about technology is learning how to provide technology support and advice to colleagues.

As the above qualitative and quantitative evidence indicate, both instructors and participants assume greater responsibility for technology support and guidance in their own schools and districts after their involvement in the RETA program. Because they are treated like professionals by the program director and staff, and because the culture of RETA is one that encourages sharing and community-building among peers, RETA participants and instructors learn to see themselves not simply as educators participating in a professional development program, but as part of a statewide network of technology education leaders.

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