



Whole-Classroom Interactive Resource Development Year One Narrative and Evaluation of Activities

Whole-Classroom Interactive Resource Development (WIRED) is a program to increase student achievement by providing whole-classroom interactive technology resources with effective, ongoing professional development and collaborative opportunities for teachers to support learning and help our districts meet their Educational Technology and Information Literacy goals. Following is a summary of WIRED Program activities for Year One including a critical evaluation of all program components: what worked well, what did not, and what needs attention in Year Two. Overall, we believe the program has been extremely successful and has the potential to make a tremendous impact on student achievement in the region.

PROGRAM PARTICIPATION

14 Elementary, Intermediate, Middle and Junior high Schools each received two “Smartboard” interactive whiteboard kits that included a new laptop computer, LCD projector and mobile carts for both the projector and interactive whiteboard. Participating schools include:

- Bayfield Elementary School
- Bayfield Middle School
- Ignacio Elementary School
- Ignacio Intermediate School
- Ignacio Junior High School
- Pagosa Springs Elementary School
- Pagosa Springs Intermediate School
- Pagosa Springs Junior High School
- Silverton School of Expeditionary Learning
- Fort Lewis Mesa Elementary, Durango
- Florida Mesa Elementary, Durango
- Escalante Middle School, Durango
- Miller Middle School, Durango
- Robert E. DeNier Youth Services Center, Durango

At the conclusion of Year One, all 28 WIRED interactive whiteboards were successfully installed and operational in all 14 participating schools. As a result of conversation about this program, several school districts uncovered interactive whiteboards in their buildings that were not being used. Four additional interactive whiteboards have been literally pulled out of closets and are being put into operation in our districts: one at Bayfield High, one in Pagosa and two in Ignacio.

Schools each named a team of teachers to participate in program activities and training workshops. It was suggested that teams include teachers of all core subjects plus special education and if possible a technology or media specialist to provide additional support. Some schools followed this pattern and others did not. One sent all math teachers, one focused on science teachers and media specialists. One school team consists of a special education teacher, a gifted/ talented teacher, and a computer teacher. Allowing each school to select its own team was important to the program as it ensured voluntary involvement by willing and motivated participants. Special attention to the unique makeup of each school team will be needed in Year Two as we look to evaluate the effectiveness of the program and correlate results to program participation.

To provide a certain level of depth in each building, as well as adequate opportunity to collaborate and work together, schools were encouraged to identify at least five members for their team. School teams selected range from two to eight participants from each building. Each team arrangement has both potentially positive and



negative consequences. Ongoing support in Year Two will need to be tailored to each school's arrangement. Small teams may need additional help brainstorming ideas or working through technical issues without other team members to call on. Large teams may need help identifying more ways to collaborate on projects and to share the equipment so that all participants remain active and engaged and do not lose learned skills through lack of use.

A total of sixty-nine educators participated in WIRED Summer Workshops. In addition to classroom teachers, participants included one building principal, an assistant principal, a district IT director, a Fort Lewis College Professor of Education and several BOCES staff. It was very helpful to be able to include these different perspectives in our discussions, and active involvement by such individuals should be encouraged. A list of educators participating in the WIRED 2007 Summer Workshops is attached.

39 attendees applied for graduate credit from Adams State College, with 64 credits successfully earned and awarded to 35 participants by the conclusion of Year One.

SUMMER TRAINING WORKSHOPS

A two-day Professional Development Workshop was scheduled for the end of June. Following the workshop, participants were expected to spend at least one day over the summer working with the equipment, software and program materials, getting familiar with the technology and preparing a lesson that they would then share at a one-day Summit held early in August. An informal, unstructured "Open House" day was provided before the Summit where teachers could come to use the equipment and work together with WIRED program instructors and educational consultants on hand to help out.

Several teachers had difficulty attending on the scheduled days and asked if there was any opportunity to "make-up" the training. In response to this, we scheduled a second session for each of the two structured activities. 49 Participants attended the originally scheduled two-day event in June and 16 attended the "make-up" training in July. 36 participants attended the original one-day Summit on August 3 and 21 attended the "make-up" session on Saturday, August 18. The weekend date was requested by several teachers as the only way they could attend.

In addition to meeting the needs of our program participants, holding two sessions for each training provided a nice opportunity to revise the instructional material in response to feedback received. Significant effort was made to rework the material based on what we had learned, specifically to provide a smoother time flow with no more than 20 minutes sit-down time, followed by a hands-on activity specifically designed to reinforce the skills just learned. This format worked well and future WIRED activities will be designed keeping this in mind.

The instructional team for the two-day WIRED Workshop in June included two trainers from Audio Visual Innovations (AVI), the vendor selected to provide program equipment. The AVI trainers provided the ins and outs of using the Smartboard interactive whiteboards. Local instructors created and led specific activities to demonstrate the use of the interactive whiteboard in a classroom. The local instructional team included:

- Becky Smith, Technology in Education Specialist
- Derinda Babcock, Lead ELL Teacher and long-standing interactive whiteboard user, Durango High School
- JoAnne Hibbard, Director of Professional Development, Durango 9R School District
- Steve Otter, Professional Development and Career and Technical Education Coordinator, San Juan BOCES

We were very pleased with the responsiveness of the AVI trainers to match their training to our needs. Mixing their instruction with our activities was not something they had done before and took considerable time, effort, coordination and open-mindedness. While the blending was extremely successful overall, there were some difficulties along the way keeping the pace and timing and order matched. One of the trainers, Kristin Kraemer, is a former classroom teacher who formed a very solid relationship with participants and staff. It is our hope to continue to work with Kristin as we develop the train-the-trainer protocol during Year Two.



The two-day “make-up” session in July was delivered successfully by the local instructional team without the vendor instructors present. 100% of participants at this July session responded “Excellent” when asked to rate “How well the instructors reached the stated goals of the workshop.” This is an important accomplishment since the ability to keep the program moving forward past the initial grant period rests on our ability to learn and train ourselves.

Other factors contributing to the extremely positive response from participants at the July make-up session possibly include a smaller group size, fewer teachers per whiteboard (4 instead of 5), and an air-conditioned facility. The June and August workshops were held in school buildings that were horribly hot and participants are commended for making the most of an extremely uncomfortable situation. Future workshops will be designed with these considerations in mind, specifically weighing the benefits of a larger group for sharing and collaborating against the more accommodating nature of a small group.

Special attention was given during both days of both sessions to instruction and practice physically manipulating the program equipment. It was considered crucial to ensure all participants were extremely comfortable with the hardware so they would not be stuck trying to troubleshoot an inoperational board in their classrooms, losing valuable instruction time.

In all of our workshops, there were some issues with the way we grouped participants for instruction and hands-on activities. The original groupings were made according to grade level, but several groups struggled because of the extremely wide range of technological abilities within their groups. When participants were allowed to self select groups, however, they often gravitated along school and district lines, somewhat limiting their exposure to a wider pool of people and ideas. Several teachers suggested groups be arranged by subject area taught. This seems like a very good idea to explore, though extra effort would be needed to not lose the potential for cross-curricular collaboration which is considered an important piece of this program.

At the Summit held August 3, we were able to provide an opportunity for participants to select one of several “mini-workshops” based on interest and technology skill level. This was done at the suggestion of several participants following the first training workshop and proved to be a successful approach to accommodate the varied needs of many of our participants.

The Open House held August 2 was another successful WIRED program component. In addition to several members of the instructional team, we were pleased to have had two educational consultants from Smart Technologies, the manufacturer of the interactive whiteboards. The casual, informal structure allowed teachers the opportunity to address unique needs and questions that would not have been appropriate in the larger group setting. One teacher brought her Elmo document camera to see if it could be made to communicate with the whiteboard. Several teachers from Bayfield were able to receive much needed Macintosh specific help, as the whiteboard operation is surprisingly different on Mac systems.

A copy of the 2007 WIRED Workshops brochure is attached. Stated objectives of the Summer workshops were to:

- Provide a collaborative forum for educators from the region to meet and share ideas.
- Excite and motivate participants about the use of WIRED technology in their classrooms.
- Provide basic instruction in the use of WIRED technology so that participants are well able and comfortable using the technology in their classrooms at the start of school.
- Demonstrate a wide variety of applications and activities so participants get a feel for the realm of possibilities.
- Provide access and guidance using written and online resources so that participants may continue to advance their learning and understanding as they work with the technology during the school year.



Feedback from participants was extremely positive. A copy of the evaluation results and participant comments from the two day WIRED Workshops held in June and July is attached, showing:

- 96% of participants rated the overall quality of professional development as above average or excellent.
- 96% of participants rated how well the instructors reached the state goals as above average or excellent.

Participants were asked to evaluate their own growth as a result of the workshop and indicated significant growth of both interest and preparedness to use the workshop information and skills in their classrooms. Before the workshop, two thirds of participants responded only “1” or “2” (on a scale of one to five) when asked how prepared they were; after the workshop, 100% of participants indicated “3” or above, with over one third each responding “4” and “5”. Before the workshop, most participants (57%) responded “3” or less when asked to describe their level of interest; after the workshop, 98% noted interest level at least “4”, 84% responding the maximum “5”.

As part of the work required for graduate credit, participants were asked to write a reflection paper following the two day workshop about their thoughts on using the WIRED program technology in their classrooms. We were overwhelmed with the extraordinary enthusiasm and strong level of commitment shown by our participating educators. Teachers offered ideas about how to use the technology in their class and their buildings, including the storage and display of attendance records and homework logs, daily data collection for student projects, presenting student led IEP meetings, assisting Professional Learning Community meetings, parent conferences, all sorts of student presentations and an incredibly rich variety of teacher led interactive lessons and other ideas. Participants also offered concerns and brought up logistical issues that need attention as we move forward. Finding the time needed to rework lessons for use on the interactive whiteboard remains a large issue.

Attached please find the reflection paper provided by Tracy Schenk, a teacher from Pagosa Springs Junior High. While we cannot claim to have satisfied everybody as well as we did Tracy, the tone of her paper does reflect the truly positive and inspiring mood of the program and its participants.

A copy of the evaluation results and participant comments from the one-day WIRED Summits in August is attached. 98% of participants agreed that participating in the Summit was valuable to their teaching. When asked to rank on a scale of one to ten how prepared they were to begin incorporating Smart Technology into their lesson plans, 74% responded with a “7” or higher” and the average response was 7.4.

“10” in this evaluation was described as “I can do anything!” Only 8% of participants indicated they felt this strongly. While we are not unhappy with the response overall, ideally all participants would be at a “10” and feel like they could do anything. Comments from workshop evaluations, as well as casual conversations with our participants, indicated a need and desire for ongoing, regular, in-person program support. Our local instructor Becky Smith was retained to serve as the WIRED Teachers’ Coach, traveling from building to building and working with teachers on an individual or small group basis. The need to support building administrators so they in turn could best support their staff was also identified. Betsey Krill from San Juan BOCES was brought onboard as the WIRED Administrators’ Coach. It is our plan to continue both of these services throughout Year Two.

When looking ahead towards planning Year Two activities, participants were surveyed about their scheduling preference for Workshops and training activities. Participants were asked to indicate their choice(s) for how to schedule training workshops once school begins, selecting all options that would be workable for them:

- 70% selected *After School* (with the program paying a stipend to teachers).
- 42% selected *During school days* (with the program reimbursing for substitutes).
- 23% selected *Weekends* (with the program paying a stipend to teachers).
- 7% selected *Before School* (with the program paying a stipend to teachers).
- 5% selected *Holidays* (with the program paying a stipend to teachers).



The original plan had been to hold workshops during school. The lack of available substitutes and the additional time it takes to prepare for a substitute are cited by our teachers as problems with this model. Less than half of participants indicated they could participate in training workshops during school days, even with reimbursement available for substitute costs. Far more indicated a preference for after-school meetings and several teachers selected weekends. Some participants indicated only one choice for when they would be available, *only* during school days, after school, on weekends or before school. The clear lack of consensus makes scheduling difficult. We will attempt to provide access to the widest number of participants in Year Two by continuing to schedule multiple sessions for each training workshop, both during and outside of school time.

In addition to regional training workshops and individual coaching support, it is our plan to provide all training materials in a self-contained, on-line format where participants can continue to advance their skills and participate in program activities even if they may not be able to attend all scheduled events. The materials will be available for participants to download and complete on their own time, for lead teachers to use when training new participants, and for all to review and refresh whenever the need arises.

EQUIPMENT AND LOGISTICAL ISSUES

In Year One, we provided all schools with fully mobile whiteboard kits that included a 77" interactive white board from Smart Technologies, laptop computer, LCD projector and wheeled carts. The computers purchased were specified by the district technology department in order to provide uniformity and compatibility with existing district machines. Through the course of the program, additional needs were identified by districts as important towards successful implementation and we did what we could to address those needs. The limited space in DeNier Youth Services necessitated the purchase of a smaller sized whiteboard. Several schools were provided wireless routers to support large teams constantly moving and sharing equipment. Additional software was purchased for a district to support the needs of specific English language learners. One district was provided an additional laptop computer for a WIRED teacher who travels between schools and works with multiple boards including an old, previously closeted unit.

Some people suggested early on that they could do without the new laptop computers in favor of more whiteboards, pointing out that almost every teacher has access to a computer. Our experience has been that the new computer was indeed a critically important part of the system, allowing for easy sharing of the whiteboard and providing a measure of distance between students and the teachers' own machines. Much of the benefit of the interactive whiteboard rests in student participation and there can be a certain amount of risk and discomfort with allowing students to use teacher computers. Also, some teacher computers have proved to be too slow to provide the quick access of large files and software required to take full advantage of the interactive whiteboard. Having a complete, working system immediately available was critically important to getting all of the whiteboards up and operational in our schools.

But looking forward to Year Two, teachers and schools have had time to work closely with the WIRED program equipment and will be able to make well-reasoned decisions about which equipment is most needed and would provide the most benefit to the WIRED participants in their building. Some schools have equipment in place, such as ceiling mount projectors that can be successfully integrated and may eliminate the need for one or more pieces of the standard WIRED program equipment. It is our plan to offer schools the opportunity to help select their own equipment package within guidelines established by the program. Schools may be able to trade out equipment such a projectors or mobile carts that they are not using to a different school that does need them, with funds saved then available for other equipment.

There is a formidable amount of space and time required to receive, log, assemble, move and configure the large volume of equipment. Even with the minimal building activity seen over the summer, it was a challenge to handle



the physical enormity of the project. We very much appreciate the help given and accommodations made by the Durango 9R School District to receive and store the materials and to host the training workshops. It could easily have been stressful and overwhelming had we not enjoyed the full cooperation of building and district staff.

As we went to configure the interactive whiteboards in the schools, several district Technology Directors and other district staff raised valid concerns about the security of the hardware in their buildings, especially over the summer. In response, locking security cabinets were purchased that fit inside the projector cart and can contain the laptop computer, projector and other peripherals. A locking cabinet will be considered an integral part of the hardware configuration for future purchases. While we did not experience any catastrophic loss due to theft in Year One, the need to be aware of security was driven home when the special allen wrenches used with and secured to the interactive whiteboards were unexplainedly removed from the training units sometime over the summer and never accounted for.

Security was also an issue as we went to set up an on-line forum to present program information and allow participants a vehicle to share ideas and go for support. We had planned to establish a site within www.swcomath.org, which was being established as a collaborative bulletin board for regional mathematics educators. But initial experience with running an open bulletin board on the swcomath site proved the idea inappropriate. The open site attracted internet trolls looking to sell anything and everything, especially sex and drugs. The site received several inappropriate solicitations daily from “new users” who required constant blocking and pruning but still left an unsafe and unsavory feel to the site.

JoAnne Hibbard with Durango 9R School District worked with us to instead create a BlackBoard Online Learning course that has proved to be a good solution. Teachers and staff have been able to post and retrieve lessons, ask and answer questions, download program forms, complete assignments, and join in discussions in a safe, structured, password-protected environment. The course is rich with hundreds of ideas and thoughts from our participants about 21st century learning, using the technology for student lessons, using it for student and staff collaboration, differentiation, classroom management, working with English language learners, supporting students with disabilities and all sorts of issues that our educators face in their classrooms. Considerable effort will be required in Year Two to compile, format and organize the information and artifacts from BlackBoard in order to present them online for display and download by others.

COLLABORATIVE DAYS

Collaborative Days is a program component aimed at providing teachers needed time to collaborate and work together. Participants could either be reimbursed for the cost of substitute teachers so they could be released from class or receive a stipend for work done outside of school time, including the summer. Participants were required to prepare a description of the activity to be conducted including a brief statement of the purpose or goal of the activity and to follow up after with a short reflection about what did happen and the progress made towards achieving the purpose or goal.

Some of the ways participants used Collaborative Days were to:

- set-up program equipment
- develop and prepare lesson plans
- practice whiteboard skills
- discuss plans for how to work together and share equipment over the course of the year
- brainstorm for collaborative project activities

One group of teachers from Pagosa Springs Junior High School created a lesson that introduces new users to the interactive whiteboard and provides the basics about how to write, erase, and move things around. This high quality lesson is equally appropriate to use with students, staff, parents and all others who may interact with the



board on a casual basis. This lesson was shared on the WIRED on-line course site and we have been told that it has been used by teachers in each of the five BOCES districts. This type of collaborative effort and achievement is precisely what we were hoping and expecting to see and we look forward to many more.

While time to work together is frequently cited as a huge need by teachers, fewer than half of participating teachers were able to take advantage of this opportunity. Many teachers indicated that they wanted and intended to do this but time simply never became available. The scheduling of program activities over the summer may possibly have worsened this problem, but prior experience tells us that finding time during the school year is equally or more difficult. “Finding time” is critical to the successful implementation of this or any new program. Ideally, adequate time to participate in a variety of collaborative activities could be included within teachers’ schedules in general, considered part and parcel of the job. This is an important issue but other than offering and encouraging the use of Collaborative Days, it is far beyond the scope of the WIRED program.

ASSISTIVE TECHNOLOGY PARTNERSHIP

When we first started talking to teachers and staff about the WIRED program, we were met with reactions across the board from instant enthusiasm to serious trepidation about how it could work. Several comments were made that our “Whole-Classroom” approach would not really be able to serve our most challenging students, including students with disabilities. One comment was made by a district IT director asking why one teacher would go to the training, remarking “you only teach special ed.” Concern was also expressed about how things would work with the most advanced students, worried they may get bored quickly with the new technology. These comments were often made in passing, without benefit of thinking things through; but they do reflect a hopeless feeling that sometimes hangs over certain students.

As we talked through these issues with staff and participants, it was decided that extra effort was needed to support all students on the edges of the “Whole-Classroom.” Students with disabilities will be encouraged to lead their own IEP meetings using a projector or whiteboard for presentations and note taking. Gifted/talented teachers were encouraged to participate in the program. Software was purchased that will assist English Language Learners. In addition to appropriate instructional tools, effective instructional practice is needed that differentiates and supports all learners.

The Assistive Technology team at San Juan BOCES was invited to participate with program development, and the resulting partnership solidified many of the concepts that are central to all learners, not only exceptional students. 94% of those attending the WIRED Summits in August agreed that participating in the Assistive Technology demonstration was valuable to their teaching situation.

When planning for the WIRED workshops, Robyn Kellogg, Assistive Technology Coordinator, was asked to name a few of the most important pieces of assistive technology to demonstrate for WIRED participants, most of whom are general education teachers. We were going to bring as much equipment as would could to the August Open House and Summits, part of showing the “realm of possibilities” using the WIRED technology. Not expected by WIRED staff, Robyn’s top suggestions were very simple devices and strategies that are helpful to all learners and did not involve any complicated or expensive equipment:

- A Microphone. Modern computers, PC and Mac, can very easily record sound input from a microphone. Teachers and students can record notes, self-edit their own writing and incorporate audio recordings into their presentations.
- Adaptive Computer Settings. Modern computers, PC and Mac, have many built-in features that allow users to easily increase text, picture, and pointer size of everything on display, magnify images on screen, use audio and/or visual clues as a signal for program functions, and manage other adaptations.



Robyn also suggested a specific digital camera she had been investigating, a very kid-friendly model from Fisher Price that is held with two hands and uses two eyes that seemed especially appropriate for students with disabilities. A camera was provided to each WIRED participant for use in their classrooms. With such a camera, students themselves can easily record events and incorporate pictures into their daily work, as well as projects and portfolios. Even though it is designed as a child's camera, it works well enough for teachers to use to prepare lessons or capture and disseminate student work.

The Assistive Technology team recommended Co-Writer and Write-Out Loud as software applications that would be very appropriate and useful within any general education setting, WIRED classrooms in particular. For less than the cost of 28 individual copies to cover WIRED program computers, we successfully negotiated a regional licensing arrangement with the software vendor that allows unlimited use across the BOCES region K-8, both in school and for students at home. This is a break-through event that provides tremendous opportunity for students all across this region.

Our experience with CO-Writer and Write-Out Loud tells us they can have a powerful impact on student writing and learning, but the cost of this software made it prohibitive and BOCES had in the past been able to purchase only a few dozen copies to share across the entire region. Student needs had to be prioritized and copies were frequently uninstalled from one room to load in another. Because the funds used to purchase this software in the past were funds dedicated to support students with disabilities, the software could not be used with students who had not been identified for special education services but were struggling and could certainly benefit. Using WIRED program funds in this way, intended to support the whole classroom, we no longer have to wait and watch a child fail before we can provide the tools we believe will help.

Additional equipment that supports the inclusion of all students in an interactive classroom was purchased, including wireless interactive slates, adaptive switches and classroom amplification systems. These will be used and evaluated by educators across the region through the BOCES assistive technology lending library, now available for all teachers to use, serving general ed and exceptional students alike. Breaking down the wall between general and special education technology services is a very exciting accomplishment of this program and will surely benefit students in the region for many years to come.

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