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Action Research Report

## **Setting:**

Sagebrush Elementary is located in Aurora, Colorado. Students feed into Laredo Middle School and Smoky Hill High School. All are part of the Cherry Creek School District. There are approximately 620 students that attend our school in grades K-5. Sagebrush is also a magnet school for students in the ELA program, consisting of approximately 50 students that are bused from other elementary schools in the North/Central area of our district.

*(For a complete demographic breakdown of the student population and test scores of Sagebrush Elementary, please [CLICK HERE](#) for the 2003-2003 Accountability Report)*

A majority of teachers in our building are older, and these typically are the ones who are the most resistant to technology. I would estimate that 65% of teachers on our staff do not have students using computers in the classroom. 20% of teachers use computers for their own productivity, but students do not have access, and the remaining 15% have attempted to use computers with students, with only limited success, mostly due the limited amount of computers available. Instead of adding more desktop computers to each classroom, I decided to use our technology budget to purchase an iBook cart with 14 laptops. This has had a significant impact on the 15% of teachers who are comfortable with technology. There has been some interest among other staff members to use the iBook cart, but there is still a lot of fear involved. The most common resistance is the lack of time available to learn how to use this new technology. I feel that if teachers can learn how to use the two computers in their room more effectively, this will lead them to use other types of technology such as the iBook cart.

## **Area of Focus:**

Teachers in our building have not been using their classroom computers effectively. Even though each teacher has two computers in their room, they do not get used. When they are, it is simply a 'game station' that students go to when they finish work early. Others do not even turn on their computers during the day. When teachers are using

the computer, it is for checking email, entering grades, and creating letters or worksheets. During my visits to classrooms throughout the day, mostly to 'fix' computers or to install software/hardware, I noticed that students do not have access to the computers as much as the teachers do. This is a significant problem, one that I hope to change so that teachers can find ways to integrate their classroom computers with students in a way that enhances learning.

The purpose of this study was to find ways to help teachers use their classroom computers more effectively. I set out to determine whether a one-on-one coaching model is an effective model of staff development.

## **Research Questions:**

- Does one-on-one coaching as a staff development model lead to effective instructional integration of technology by teachers?
- Are teachers willing to work with a 'technology coach' in a one-on-one setting?
- What measurement can be done to determine the effectiveness of this type of staff development?

## **Membership:**

"Ms. W":

- 5th Grade Teacher
- Intermediate Tech Level
- Age 20-29
- 2-4 years of teaching experience

"Mrs. T":

- Gifted and Talented Teacher
- Intermediate Tech Level
- Age 50-55
- 20-25 years of teaching experience

## Description of Intervention:

The coaching I did with members revolved around teaching advanced PowerPoint techniques in order to expand on current curriculum being taught in the classroom. The specific techniques I showed each member are listed below:

<p>“Ms. W”:</p> <ul style="list-style-type: none"><li>• Find appropriate graphics on the Internet and insert them into a PowerPoint slide</li><li>• Create animations for each element on a slide</li><li>• Choose a design template for a presentation</li><li>• Record narration in order to create a self-timed, narrated slide show presentation</li></ul>	<p>“Mrs. T”:</p> <ul style="list-style-type: none"><li>• Create an image collage on a PowerPoint slide by inserting graphics obtained from the Internet</li><li>• Insert captions for each image that appears on the slide by using a text box</li><li>• Create a link to this PowerPoint document using Inspiration 7.5 that relates to the web students created</li></ul>
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## Data Collection Techniques:

- 1) Questionnaire to Carole Martinez, Teaching Learning Technology Specialist, for Cherry Creek Schools. Carole is my direct supervisor in my position as Student Achievement Specialist (SAS) at Sagebrush. She is responsible for supporting 12 schools in the North/Central area of our district. I consider Carole a mentor, and value her opinions. I asked Carole several questions pertaining to staff development and how other schools are training teachers in technology integration.
- 2) Instructional Technology Needs Assessment will be given to members of our school Technology Committee, including the two participants in this project. The purpose of this needs assessment is twofold: (1) identify strengths and learning gaps

in order to design and implement professional development. (2) document growth through a pre/post survey.

[http://www.ccsd.k12.co.us/admin/technology/saq\\_techneeds/survey.lasso](http://www.ccsd.k12.co.us/admin/technology/saq_techneeds/survey.lasso)

3) Evolution of Thought and Practice Self-Assessment will be given to two members of our Tech Committee. I will give this self-assessment rubric before and after our one-on-one coaching sessions in order to measure the effectiveness of this professional development model.

[http://www.ccsd.k12.co.us/admin/technology/c4t\\_0304/etap\\_post/etap\\_post.lasso](http://www.ccsd.k12.co.us/admin/technology/c4t_0304/etap_post/etap_post.lasso)

4) Classroom Observation Rubric was used to observe each teacher in the classroom, delivering instruction to students that was taught to them during my coaching sessions. I observed teachers using technology in the classroom, then we met to review the rubric, comparing my scores with their own self-evaluations

### Triangulation Matrix:

Research Questions	Data Source			
	1	2	3	4
Does one-on-one coaching as a staff development model lead to effective instructional integration of technology by teachers?	TLTS Questionnaire	Online IT Needs Assessment Survey		Classroom Observation Rubric
Are teachers willing to work with a 'technology coach' in a one-on-one setting?		Online IT Needs Assessment Survey	Evolution of Thought and Practice Pre-test and Post-test	Classroom Observation Rubric
What measurement can be done to determine the effectiveness of this type of staff development?	TLTS Questionnaire		Evolution of Thought and Practice Pre-test and Post-test	Classroom Observation Rubric

## Data Analysis:

The data I collected during my Action Research each provided some significant information. Each data collection technique is listed below, with a brief narrative included that highlights how I used this information in my research:

### **Email questionnaire of Carole Martinez, TLTS (Teaching Learning Technology Specialist), CCSD Office of Technology**

I asked Carole several direct questions regarding her opinions on how professional development is being implemented in the district. Her candid responses to my questions provided the framework for deciding upon an effective method of providing training to teachers in my school.

In your opinion, why are some staff development classes more effective than others?

*The most effective staff development is ongoing over a period of time, not just a one-time event. Secondly, the staff development has to be relevant to the needs of the teachers. There must be an expectation that teachers apply what they learned with their students. Teachers need time to reflect upon and share their experiences with others. They need to see that their practice promotes higher student achievement.*

This response led me to develop a model of coaching that can be used on an ongoing basis. I have continued to work with the two members of my study in order to help them learn more strategies that can be used in the classroom.

How is professional development being transferred into improving classroom instruction? What measurement is being done to determine the effectiveness of professional development?

*The feedback is generally informal and anecdotal. **This is a huge issue, one that would merit your attention and perhaps become the main focus of your action research project.** We do use both formative and summative assessments of our programs, the formative one being the Evolution of Thought and Practice. We also have instrument based upon the NETS standards, which we administer to our C4T participants at the beginning and at the end, to determine growth.*

Carole's response leads me to believe that this issue is one that everyone in our district is struggling to understand. I'm hoping that by providing ongoing coaching and follow-up, teachers will continue to use technology in innovative ways. I also used Carole's comments about the Evolution of Thought and Practice survey as an important piece in determining teacher's attitudes towards technology.

## **Technology Needs Assessment Online Survey**

The questions most relevant to this study were:

- *Use presentation software such as PowerPoint to create a multimedia presentation*
- *Design and teach a lesson in which students use presentation software to share knowledge and expertise with classmates*
- *Adapt to a variety of teaching environments such as one computer in the classroom, mobile laptops, and computer labs*

I focused my coaching on PowerPoint with both members of my study. Each teacher had specific needs that I hoped to address through training, such as how to use PowerPoint in conjunction with other software (Inspiration) and how to create a narrated slide show that would demonstrate that research was done on a famous person in history. I encouraged the use of our school's iBook cart, as well as suggesting ways to use the two computers in their classrooms, and signing up for the computer lab. My training focused on specific skills using PowerPoint, and culminated in observing and assisting while each teacher showed students how to use these newly acquired techniques.

After seeing how each teacher used PowerPoint with their students, I am confident that they now see the benefits of this program. In our post-observation meetings, both members began to think of other curriculum areas that students could use PowerPoint to show their work. These discussions have already led to more coaching opportunities, and I feel confident that these two members can now begin to share their knowledge with teammates and other teachers. ([http://www.ccsd.k12.co.us/admin/technology/sag\\_techneeds/survey.lasso](http://www.ccsd.k12.co.us/admin/technology/sag_techneeds/survey.lasso))

## **Evolution of Thought and Practice Survey**

This spreadsheet was adapted from Apple's Classrooms of Tomorrow study

(<http://www.apple.com/education/k12/leadership/acot/library.html>).

It asks teachers to rate their own professional practice through three phases: 1) Adoption 2) Adaptation 3) Appropriation. My goal through this coaching project was to move the participants from 'adaptation' to 'appropriation' as it pertains to two areas from the survey:

*ADAPTATION--Sometimes my instruction is aligned with content standards and technology standards. A few of my units are project based.*

*APPROPRIATION-- My instruction is purposefully aligned with content and technology standards. Most of my instruction is taught in the context of projects.*

*ADAPTATION-- Students use productivity software (Such as PowerPoint, Inspiration and Word) to demonstrate their understanding of curricular skills and concepts.*  
*APPROPRIATION-- Open-ended projects, productivity software, and simulation technology is used to teach, model and understand curricular concepts in my classroom.*

Based on the coaching model that was implemented, I feel that the two members of my study are beginning to move from Adaptation to Appropriation in these areas. They now see how PowerPoint can be a useful tool to help students use higher level thinking skills. Members are also beginning to see how open-ended projects stimulate discussion among students. For example, students researching famous people of the Civil War began using Google's image search to find maps from the 1800's. They recognized the need to refine their searches in order to find exactly what they were looking for. What began as a simple two-word search ("Virginia map") turned into an advanced vocabulary-building activity as students began to modify their searches by using specific search terms ("authentic Virginia map from the 1800's").

Both teachers rated themselves in the Adaptation phase on most questions. Ms. W rated herself lowest (Adoption) in "Problem Solving" and highest (Appropriation) in "Differentiated Instruction" and "Teacher Collaboration." This tells me that she would be a good candidate to coach other teachers and show how she groups students through differentiated instruction.

Mrs. T did not rate herself in the Adoption stage for any areas. She rated herself highest in "Teacher Collaboration," "Multidisciplinary Instruction," "Frequency," and "Classroom Organization." This tells me that she, too, would be willing to share her knowledge and ideas with others in the building.

### **Observation Rubric**

Finally, I created an observation rubric that was used to evaluate the effectiveness of each teacher's lesson. The results of my evaluation and each teacher's self-evaluation are included in the references section.

The results of the rubric shows that even though teacher directions and modeling may have been unclear, students were still able to complete their task and demonstrate that they learned how to use technology effectively.

After observing each lesson, I realized that I should have done more coaching before teachers began showing students how to use PowerPoint.

With Ms. W, I should have spent time teaching her how to work with sound files more effectively, how to link narration to individual slides, and saving sounds in an external folder in order to avoid “not enough memory” errors. I also learned that with each new recording, old sound files need to be deleted to avoid overlapping narration. Using narration with PowerPoint was a new process for me, too, and as I began coaching Ms. W, I learned that memory errors occur when sounds are not saved separately. Going through a process like this helped me to understand what to focus on the next time I coach a teacher with PowerPoint narrations.

With Mrs. T, I should have spent more time explaining the importance of moving back and forth between Inspiration and PowerPoint, and knowing which application is active. I observed several students having difficulty remembering which program was open, making Mrs. T’s directions harder to follow.

My rubric ratings were consistent with what each teacher thought of their lesson. Part of my post-evaluation was to ask each teacher how she could apply what she learned to future lessons. They mentioned items such as using more hyperlinks to PowerPoint in other applications, creating narrated book reports, digital storytelling, and creating autobiographies. All of these are excellent ideas, and I plan to continue this coaching model with teachers. I also asked each teacher if they’d feel comfortable enough to share what they learned with other teachers in the building. They said yes, but with more training in order to feel more knowledgeable with using PowerPoint. I plan to continue coaching these two teachers to reinforce the skills I’ve shown them, and help them use technology for other class projects.

## **Summary of Findings:**

As a result of conducting action research to determine the effectiveness of one-on-one coaching as a model of professional development, I found that this model is an excellent method to assist teachers to use technology in their classrooms. Both members of this study felt that they benefited from individualized instruction, and that more progress is made through this type of training as opposed to

group settings. Teachers were able to ask for specific techniques to help them deliver instruction to students.

**Does one-on-one coaching as a staff development model lead to effective instructional integration of technology by teachers?**

Yes, this model helps to provide instruction based on the needs of the individual, making the training more meaningful to participants. I have noticed both members using PowerPoint more with students, and they are coming to me with questions to help develop technology-based lessons.

**Are teachers willing to work with a 'technology coach' in a one-on-one setting?**

I found that teachers are MORE willing to work with a coach as opposed to attending group-training sessions. Both participants were willing to stay after school for training. They were also coming up with other PowerPoint techniques that they'd like to begin using with students. Each member was interested in what I was showing the other member, which opened up opportunities for further training.

**What measurement can be done to determine the effectiveness of this type of staff development?**

The Evolution of Thought and Practice survey is one method to show growth. Members scored themselves as moving from the Adaptation to Appropriation phase with their PowerPoint skills and their ability to use presentation software to increase student achievement. They also felt ready to collaborate with other teachers related to common goals and interests.

**Recommended Actions:**

Since I found that one-on-one coaching is effective, I plan to continue training teachers in our building with this model. One-on-one coaching was written into my building Technology Plan for next year, so I will begin to work with other members of our Technology Committee, as well as the two C4T (computers for teachers) participants. In addition, I will conduct 'reinforcement training' with the original participants of this study so they can begin training other members of their team. By spreading the knowledge base of technology to other staff members, it is my hope that more teachers will begin to see the benefits of using technology in the classroom. I'd like to continue to focus on the use of PowerPoint as a specific tool to help teachers develop meaningful projects and activities with students.

**References:**

Articles

NCREL. "Technology Professional Development." NCREL 2000. 1/24/2004

<http://www.ncrel.org/tech/tpd/index.html>

Richardson, Joan. "Build a Bridge Between Workshop and Classroom." NSDC / Tools

for Schools 10/31/2003. 01/24/2003 <http://www.nsd.org/members/tools/tools10-03.pdf>

Documents

[Evolution of Thought and Practice Survey](#)

[Interview with Carole Martinez, TLTS, Office of Technology, Cherry Creek Schools](#)

[Classroom Observation Rubric](#)

[Technology Needs Online Survey  
Survey Results \(Excel\)](#)