How Coaching Affects Technology Integration in the Elementary Classroom

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How Peer Coaching Affects Technology Integration

In the Elementary Classroom

Educational Technology is everywhere. Elementary children regularly use technology in their daily lives. Our schools are full of technology and technology budgets are increasing. Smartboards, computers, tablets and other devices set the stage for our students to use this technology as they will one day in the professional world. Unfortunately, it is not being used to its full potential. Technology professional development, as it is being delivered today, is less than desirable. Teachers sit in in-service classrooms for four or more hour sessions. In these required sessions, participants are being shown the same technology tools and ideas regardless of grade and their own technological proficiency. Teachers rarely have time to practice what they have learned and leave the training sessions with an incomplete understanding of technological requirements or how to use the new tool. They therefore do not know how to implement new technology strategies in their classrooms. What the current model fails to take into account is the individualized needs of our teachers and how these tools and apps need to be taught for teachers to use them to meet learning goals in the classroom. More often than not, the hottest new ideas are no more than a list of the latest applications with no specific application to educational content. Most importantly, the lessons taught have no relationship to how they can contribute to a more effective learning environment for our students. Most teachers do not always have the technical background to independently recreate these activities on their own, creating yet another barrier to technology integration. This paper is a reflection of my experiences as a technology coach this past semester for three of my elementary school teacher colleagues. The paper focuses on how the coaching affected teacher’s attitudes and their ability to integrate technology into their classrooms.

**Literature Review**

**Traditional Professional Development (PD)**

Successful student outcomes are tied directly to quality classroom instruction by teachers. Teaching successful and effective technology teaching strategies to teachers is a challenge but a necessary first step. With today’s stringent accountability standards and requirements for measuring student success, school districts and educational leaders alike are exploring the most effective ways to create support systems necessary for teachers to engage and refine their teaching practices (Gallucci, DeVoogt Van Lare, Yoon, & Boatright, 920). As one would expect, in most school districts, we see the tried in true methods of traditional classroom training. Training sessions are provided for large numbers of participants which deliver one size fits all content. These trainings are not differentiated based on need or skill levels and usually do not include follow up or continued support. Ultimately, at the end of the session the participant is on their own to implement the new information and skills (Carlow, 10).

 According to Ye, Walker, Recker, Robertshaw, Sellers and Leary, teachers do not have the necessary skills and knowledge to effectively implement technology integration in the classroom. Teachers need more than just traditional professional development (PD) to effectively teach and work with students in today’s educational technology rich classrooms (511). They also point to a lack of evidence that shows how newly learned technological skills can be integrated both with content and pedagogical knowledge that truly effect overall student achievement (511). In *Professional Development Plans for Technology Education*, Thomas Loveland argues that more continuing education is necessary due to rapid changes in technology and research findings (26). However, teachers need both the knowledge and hands on support for technology integration to be truly successful (Potter & Rockinson-Szapkiw, 23). One solution to this problem could be a peer coaching relationship to provide the necessary support to enable teachers to be successful at integrating technology in the classroom.

**Peer Technology Coaching**

What is a technology coach? A technology coach is “a person that provides technology support found in a school or in a school district, such as a technology facilitator” (Sugar & Slagter van Tryon, 54). This section will examine the peer coaching model, why it works and why it may not be easily implemented within school districts.

**Coaching Model**. A coaching model can be used to create a learning environment in which teachers set their own pace. The coach works with the teacher in the context of the teacher’s specific learning and teaching style (Carlow, 10). This allows teachers to learn new content, skills and teaching methods within a framework of support, collaboration and accountability. This model of continual professional development has been found to be more successful and effective in helping teachers learn these new strategies to use with their students (Sugar & Slagter van Tryon, 54). Part of the process includes coaches and teachers creating short and long term goals that incorporate learning benchmarks. Stephanie L. Potter and Amanda J. Rockinson-Szapkiw argue that effective technology PD should include three elements: (1) teachers learning how to operate or use the technology; (2) teachers identifying how they can most successfully apply the technology; and (3) teachers integrating technology into the classroom with mentor support (23). Ultimately, technology coaches create a supportive learning environment in which teachers can explore, share and learn from each other.

**Why the Coaching Model Works.** According to the research cited herein, there are many benefits to creating a PD model that includes human infrastructure and support. One benefit is the collaboration among teachers and the sharing of best practices. As their confidence grows, so does self-efficacy which leads to more exploration and integration of technology (Potter & Rockinson-Szapkiw, 25). The ultimate goal of increasing technology integration is to increase student achievement. “Student achievement is positively influenced when learning is connected to reality” (Potter & Rockinson-Szapkiw, 25). Sugar and Slagter van Tryon argue that by connecting technology to real world learning experiences teachers become more motivated to learn how these new tools and strategies can positively impact their students (55).

**Barriers to implementation**. While the benefits of technology coaching are apparent, the actual practice is not necessarily standard. There are at least two rationales that support this lack of PD in our schools. First, while coaching small groups of teachers has been shown to create successful learning environments for technology integration at our schools, many school districts cannot afford to assign technology coaches (Sugar & Slagter van Tryon, 55). Ultimately, districts will need to conduct their own training needs analysis to determine the effect of untrained teachers on the educational benefit of the dollars being spent on purchasing technology. If districts are not seeing a return on investment because teachers cannot use the technology, there is a case for increased budgets in PD to include technology coaches on campuses (Carlow, 11).

 The second rationale is the role and responsibilities of coaches within the professional learning environment. While we think of coaches as trained experts, Gallulucci et al., point to the fact that coaches are learners themselves and more often than not are teacher in their own schools that have been identified as potential leaders (921). They believe that districts do not have a good understanding on how coaches gain the necessary skills to successfully take on these coaching responsibilities within our schools hence there is a shortage of effective coaching (922).

**Methods**

I conducted my coaching at Pecan Grove Elementary (PGE) which is in Fort Bend Independent School District (FBISD). I have taught at PGE for ten years. On average, PGE teachers have more than 20 years of teaching experience. Our campus has been working very hard over the past two years to upgrade the technology available to our students. Our principal has designated Wednesdays as “Wild Wednesdays” where all teachers who have SMART boards are to utilize them to work on word problems or other areas of need.

**Technology at PGE.** All of the classrooms have a working teacher computer, ELMO and projector. All computers have access to the following software: KidPix, Kidspiration and SMART Notebook as well as the full Microsoft Office suite. Most of the classrooms have SMART boards and on average have 2-3 working student computers. The exception to this is our enrichment classes – Art, music and PE. None of the enrichment classes have any working student computers. PGE also has a computer lab. Our computer lab rotation is created by our administrators and K-2 classes are only allotted one 30 minute slot every other week. Enrichment classes are not included in the weekly rotation. The computer lab is also reserved for weeks at a time for student testing as well as by grade level projects, mostly 4th and 5th grades.

**Coaching detail.** I coached three teachers this past semester. My coaching consisted of an initial meeting with each participant to determine their level of technology knowledge and their specific needs and desires in regards to learning about integrating technology in their classrooms. Subsequent meetings were also done in person as well as through emails. These meetings occurred several times throughout the semester. I worked outside of our meeting times to research ideas and to create overviews and documents to help pique their interest and/or guide them through specific integration projects. On several occasions, I joined them in their classes either on my lunch break or during my conference period to co-teach or assist where needed. I also spent time after school assisting with whatever technology needs they might have had. Below is a description of my colleagues that I coached, including their years of experience, integration pieces and overall level of comfort using technology.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Colleague | Grade level | Years Teaching | ComfortRating\* | Integration | Total CoachingTime |
|  |  |  |  |  |
| A | 1 | 8 | 4 | KidPix, SMART Notebook Software, Scholastic Story Starters  | 15 |
|  |  |  |  |  |
| B | K | 15 | 3.5 | Photostory, SMART Notebook Software, SMART response, Scholastic Story Starters  | 18 |
|  |  |  |  |  |  |
| C | K-5 (art) | 22 | 2 | Pixlr, Weebly, PhotoPeach, MS Word & Outlook | 12 |

***\*Participants rated their comfort level of using technology on a scale of 1-5, 5 being very comfortable***

 **Teacher A.** Teacher A (A) is a first grade teacher. I taught with Teacher A for several years in kindergarten. She has just moved to first grade and therefore is working with a new grade level team this year. Teacher A’s team is very structured and has a high degree of standardization in regards to teaching of content. Teacher A does not regularly go to the computer lab as technology is not widely used by Teacher A or her team.

Our first integration project was using KidPix. The students had been studying the water cycle in science. The students brought their journals down to the lab and worked in pairs to draw a representation of the water cycle labeling each step of the process. I was in the lab with Teacher A and one other 1st grade teacher and assisted the teachers in utilizing the program with their students. All four classes went down to the computer lab to complete this activity.

 Teacher A’s next area of integration was learning about and using SMART exchange notebook software in her classroom. She was interested in how to access SMART exchange to download lessons/resources. Teacher A and I met so I could show her how to utilize pre-made lessons to teach her classroom curriculum. I also showed her how use the tools available through the software to create her own resources and activities. She was really excited to be able to use this software to create lessons for her kids and asked that I help her install the software on her home computer. While this was a successful project, I think the next step would be to help her link these activities to her student computer in her classroom so that students can access these resources on their own during workstation time.

 The final integration piece was Scholastic Story Starters. Through our discussion, Teacher A indicated that she was having a hard time getting through journal time with her kids. I suggested Scholastic Story Starters as a way to increase interest in the writing process. I suggested several ideas on how to use the tool with her classroom including whole group ideas, small group and individual practice. She decided to start by using it with her whole group and model how to use the tool followed by modeling of the writing process. If I were to introduce this tool to her again, I would ask to co-teach so that she could see firsthand how easy it is for her students to use the site independently. This would allow her to add a writing component to her computer workstation time.

**Teacher B.** Teacher B (B) is a kindergarten teacher that has over 15 years of teaching experience. I have gotten to know B over the past five years as she was the Pre-K teacher for four of those five prior to her moving to kindergarten. Teacher B rates herself as a 3.5 and was very vocal about her ability to use technology. She does not believe that she has enough time to integrate technology into her lesson plans. She was excited to participate in the project as she hoped to learn more and to be able to integrate more technology into her classroom by having a coach. Teacher B does not go to the computer lab regularly. However, she does use her student computers in the classroom on occasion.

Teacher B’s first technology integration involved the digital camera (iPhone) and Photostory. Teacher B was interested in trying to share her student’s Texas unit with parents. The students used the iPhones to take pictures of their work. This work was then uploaded into Photostory. The teacher attempted to use the microphone feature of Photostory to allow her students to upload a narrative to their story. Unfortunately we were unable to sync voice to photo and we ultimately set the photos to a Texas themed song. We are planning on creating Mother’s Day digital “cards”, and we plan to change the tool that we will use to Little Bird Tales. This will allow the students to complete more of the project themselves as well as be able to match up audio and images easier.

Teacher B’s second integration piece was SMART exchange software. These activities tie directly into our campus plan on increased use of SMART Boards and technology on Wednesdays. Teacher B outlined various activities and concepts that she wanted to review with her kids and I shared links to resources and other strategies in which she can find these on her own. Another integration piece we worked on was SMART response clickers (clickers). Clickers are wireless remotes that allow children to respond to various questions. They are fun, interactive and also can provide formative and summative data to the teacher. I modeled and taught clickers to the kindergarten students. This tool was a little frustrating as we had quite a few technical issues. Eventually we were successful and the kids responded very well to the technology. They were very excited and looked forward to using them again. In fact, when I would see them on the playground or in the halls they would ask, “When are we doing those clickers again? That was fun!”.

The final integration piece was Scholastic Story Starters. Teacher B had mentioned that she was not having much success with the way in which her team was conducting writing. I shared this tool with her as a way to engage the students with their writing and to try and get them excited about expressing themselves creatively. As I had done with Teacher A, I suggested several ideas on how to use the tool with her classroom. She started by showing them the tool and then having the group read the different prompts that would come up. She said the class enjoyed reading the prompts which allowed for some teachable moments in reading strategies. Next, she used it with her whole group session in their writing block.

**Teacher C.** Teacher C (C) is an art teacher and has over 25 years of teaching experience. I have gotten to know Teacher C over the past 10 years teaching at PGE as she teaches all six grade levels. C rates herself the lowest of all three coachees as a 2. In our first meeting, she referred to herself as a “dinosaur”, however, she was very much interested in learning about new technology.

Our first integration piece had to do with editable lesson plan templates (word document) and how to link to pictures, websites and videos in a document. C wanted to learn how to do this to help organize the resources she has found on the web. She also was interested in learning this to make her lessons flow more smoothly and to share more engaging activities, pictures and videos that can be found on the internet with her students. We spent a session with me modeling the steps. I then created a screencast and she requested a “cheat sheet” that she could leave up by her computer to help guide her thought the steps until she became comfortable. Also included in this piece was instruction and guidance on how to organize folders in Microsoft Outlook. She wanted to be able to organize her inbox by parent emails, administration, etc. to be able to find important information and resources easily.

Our second integration piece was Pixlr. Pixlr is a photo editing software that is easy and straightforward. Although I created a cheat sheet and screen cast for her, she also wanted to meet so that I could walk her through how to edit photos. Ultimately, this was used in her Art Club which is an after school program for fifth graders. The kids used the software to create a pop art project styled after Andy Warhol’s work. I participated by modeling the teaching/use of the software and assisted students where needed.

Our final integration piece was PhotoPeach. Teacher C wanted a way to display work for students for upcoming projects and parents on Open House night . PhotoPeach is very straightforward and easy to use for someone who is not as comfortable using technology. Next month’s art club project is making masks. We took images from prior years and uploaded it to create a short slideshow to share with students.

**Findings and Results**

 Overall I found that coaching is not as straightforward as I thought it would be. I did see improvement within each participant, and as we had a success, enthusiasm increased. After Teacher B was able to share with her parents at Open House the Texas Photostory she came walking down the hall with a big smile saying, “lets do some more technology projects!”. I found that when I was able to model the lesson or the use of technology, particularly within the learning environment itself, there was a higher connection to the technology by the coachee than when I just sent them information and steps. As I worked side by side with Teacher C, some of her initial concerns were that she would not be able to trouble shoot or that the kids would misuse the internet. However, by the end of our art project she was trying to think of ways that she could do this with larger groups of students because she could see the value and had a better understanding of how to make it work. Teacher C later commented in her journal, “I feel a little more comfortable and willing to look at more technical things as a way of artistic expression.”

From their experiences, I can see how the coaching model helps teachers to integrate and use new material as compared to traditional PD. In traditional professional development, teachers are encouraged to attempt technology integration, but when problems pop up (no matter how minute), they are quick to abandon the effort as they do not have enough time or adequate support structures to deal with the problems. For those with inadequate training , simple problems can turn into hours of headache or wasted teaching time. In our photoclub we had one student who could not access the downloaded picture. If I had not been there to troubleshoot, the teacher’s time would have potentially been wasted on failed attempts to get something to “work” and the sheer frustration could have clouded over the successes of others. By having a coach to help teachers through some of the initial steps and problems, the focus can be on the students and both students and teachers are being supported in their learning.

The highlights from the coaching experience were seeing the kids and their reactions to the projects they were creating or the tools they were using. I also found the teacher’s reactions and opinions towards the technology exciting. When Teacher A was in the lab with the kids creating her pictures using KidPix she could really see the value of taking the time to find ways to use the lab even though, “they are so loud!”. Teacher C really saw how technology can open up more doors and our experience highlighted her belief that every school should have a technology coach as a resource when teachers have difficultly or can not solve their own technology problems. I hope to be that person for her on our campus as we talk about and plan things for next year.

I would definitely recommend the coaching process to educators or administrators. I would recommend at the beginning of the year administrators reach out to those teachers who feel comfortable with and are using technology in their classrooms to offer their expertise and experience to others. I also would stress the importance of finding a way for these coaches to be in the classroom, side by side, helping to implement the technology. I would also recommend that they talk with their staff and educate them on the resources available to them in these coaches. I would suggest using a similar coaching model as we have used this semester where activities/needs are assessed, tools/software identified followed by supported implementation of these tools. Over time, coached teachers will become more independent, and hopefully others will see the success and “fun” which should lead more teachers to sign on to participate.

The coaching process truly deepened my own personal conviction that technology integration is not going to happen from a help desk. The coaching process takes trying to figure out technology and how to use it out of a vacuum. I learned that the coaching process does not happen overnight. It is something that needs to be mapped out, but also flexible and personal. As Teacher A said, “It has been very helpful to have someone to bounce ideas off of and have her show me ways to integrate them through technology.” Based on this study, I believe the most critical element that must be part of a peer coaching program is the idea of a learning team which must include the coach modeling and participating directly with the teacher who is integrating the technology in the classroom.

**Conclusions**

 I have also learned a lot about myself as a coach. My biggest challenge as a coach can be tied by to my SrengthQuest Test that we took at the beginning of the semester. My 5 strengths were: integrity, faith, determination, optimism, and curiosity. I believe that these strengths helped me to work with each teacher to address their specific needs and pushed me forward as personalities clashed or technology did not perform as expected. Because this was purely voluntary and a peer effort, where I struggled was leadership. If I were to coach again, I would start by assessing and outlining the eight high-leverage tactics that effect change in schools (Knight, 218). My top priority would be to work on clarifying my message so that I can communicate my ideas to others in a clear and concise way. My second priority would be to develop my personal message of why technology integration is worthwhile in the classroom as Jim Knight says, “to have others stand with you” (218). I think these two things are important to help people get excited about implementing new strategies, have trust in the coaches’ abilities and to be able to affect change in others.

Successful coaches should be leaders and effective communicators. They also should be empathetic towards others. A coach ultimately wears many hats. While the goal may be to integrate a specific tool or complete a project, coaches need to make time for their coachees other needs that may or may not be related to the specified task at hand. Coachees, on the other hand, need to be open minded and flexible and want to make a change to their current teaching strategies. Just having a coach on campus is not going to effect change. Coachees play an integral role in the success of impending new strategies and change and I believe that they must have the desire to help their students achieve and grow over and above the status quo. Together the coach and coachee can help bring 21st century solutions to children’s educational needs.

References

Carlow, S. (2013, December/January). Mythunderstandings: It and computer coaching. *Human Resources Magazine*, *18*(5), 10-11.

Gallucci, C., DeVoogt Van Lare, M., Yoon, I. H., & Boatright, B. (2010). Instructional coaching: Building theory about the role and organizational support for professional learning. *American Educational Research Journal,* *47*(4), 919-963. Retrieved from http://www.jstor.org/stable/40928359

Gaytan, J. A., & McEwen, B. C. (2010). Instructional technology professional development evaluation: Developing a high quality model. *The Delta Pi Epsilon Journal,* *52*(2), 77-94.

Knight, J. (2007). *Instructional coaching: A partnership approach to improving instruction*. Thousand Oaks, CA: NSDC.

Loveland, T. (2012). Professional development plans for technology education: Accountability-based applications at the secondary and post-secondary level. *Technology and Engineering Teacher,* 26-31.

Potter, S. L., & Rockinson-Szapkiw, A. J., EdD. (2012). Technology integration for instructional improvement: The impact of professional development. *Performance Improvement,* *51*, 22-27. Retrieved from http://dx.doi.org.libproxy.hbu.edu/10.1002/pfi.21246

Sugar, W., & Slagter van Tyron, P. J. (2014). Development of a virtual technology coach to support technology integration for K-12 educators. *TechTrends,* *58*(3), 54-62. doi: 10.1007/s11528-014-0752-7

Ye, L., Walker, A., Recker, M., Robertshaw, M., Sellers, L., & Leary, H. (2012). Designing for problem-based learning: A comparative study of technology professional development. *US-China Education Review,* 510-520. Retrieved from http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED534307