Integrating Technology Through Peer Coaching:
A Study of Technology Integration Strategies Via Peer Coaching

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Introduction

Almost everywhere one looks these days, it seems as though technology is everywhere and almost every person has a device such as a smartphone, tablet, or laptop. Sitting in the local coffee shop, one can see students and professionals utilizing technology to engage in learning, collaboration, communication and productivity. If technology is so important, one place that must utilize technology is the field of education. This is a field that seems to be ever changing. Jacobsen, Clifford, and Friesen (2002) say it this way, “Our human survival depends on our ability to learn new things and use ideas to solve problems in deeply ambiguous and confusing situations; and it depends on our ability to teach our children how to do this,” (p. 364). Our children today must learn in ways that causes them to solve problems. Technology is one tool that can be utilized. The presence and developments of technology seem to make that statement even truer. Technology is not going away and teachers must begin to get on board with utilizing and effectively integrating technology into their classrooms.

Dr. Kevin C. Costley, of Arkansas Tech University, states that technology has a positive impact on student learning because it causes students to become more engaged. He continues and says that educators should utilize the availability of technology to make a lasting impact on student learning in order for them retain more information (Costly, 2014). It would be fair to say that all teachers want their students to be more engaged and gain meaningful learning from their instruction. The question is how can they use technology to do so.

One of the ways that educators grow in their profession is through professional development. This can take on many forms and some methods are more effective than
others in empowering teachers to change and grow. Peer coaching, sometimes called
collegial coaching, is one method of developing these skills. Most classrooms today have
some kind of technology in them. Most educators are pushed to integrate more
technology into their lessons, but often are not told how to do so. Through the setup of
peer coaching, there is support from the onset of the idea, all the way through the
integration and reflection.

In a study conducted by Yali Zhao and LaAnna Bryant (2006), the researchers
found that where the state of Georgia mandated training for teachers for technology
integration and offered follow up support via technology integration specialists, however
all did not utilize this support. The teachers involved praised the training, praised the
training for the most part, but the ones who did not participate in any mentoring felt
frustrated and as though they had lost what they learned in the trainings. (p. 58) The
researchers found teachers’ attitudes, after mentoring, were considerably affected.

Zhao and Bryant (2006) stated that, “They (the mentored teachers) felt the
mentoring allowed them to expand their technology integration skills based on
their current skill level, provided ideas for integrating with state curriculum
standards they were currently teaching, and in their own classroom with their
students. These teachers were able to integrate technology more efficiently and
meet required curriculum standards without compromising limited academic time.
Also, teacher preparation time for integrating technology was reduced because
someone who was more familiar with technology was providing integration ideas.
(p. 59)

The impact of support on assisting teachers seems to be clear
These are not the only researchers to study the impact of peer coaching. Beverly Showers and Bruce Joyce (1996) present their findings from a fifteen-year long study related to the effectiveness of implementing seminars that would enable teachers to implement and practice their own learning from staff developments. These seminars were actually coaching sessions. The researchers found that the results showed that teacher implementation rose dramatically after having these sessions. They suggest that teachers should form small peer coaching groups and share collaboratively so that staff development might actually directly impact student learning (p. 8).

This would be true for professional development coaching with or without technology. It is important that teachers have a platform for practicing what they are learning and receiving real and effective feedback from those who know about the given topics. Thus peer coaching. With peer coaching for technology integration, “The technology coach essentially establishes and nurtures a professional learning community of teachers,” (Sugar & Slagter van Tryon, 2014, p. 55). This makes the role of technology coach vital to teachers who want to use and integrate technology. Later in the article Sugar & Slagter van Tryon (2014) state that teachers who are engaged with coaches feel more confident and empowered with technology when they are a part of such a community (p. 55).

**Research Question**

This study sought to determine the effects of peer coaching in order to assist other teachers with technology integration and the impact on student engagement and performance.

The study specifically sought to answer these questions:
1. Does peer coaching empower teachers to utilize new technology tools in their instruction?

2. Does the use of technology improve student engagement and learning?

**Methods**

This study was conducted at White Elementary School, located in the Houston Independent School District. The campus serves approximately eight hundred fifty students, from Pre-kindergarten through fifth grade. The researcher served as a peer coach to four participants from among the staff of White Elementary School.

During the fall semester, the coach met with the five participants for one or more sessions weekly or bi-weekly. Sessions ranged from half an hour to two hours. Additional time outside of these sessions was also allotted for research and planning towards time spent in the sessions. Portions of the time was spent co-planning with participants towards the implementation of new technologies in order to ensure lesson objectives were appropriately aligned in each lesson. Upon completion, the entire study consisted of roughly forty-five hours combined coaching time encompassing all of the time researching, planning, designing, and teaching. Due to the number of participants and the vary needs of each, the time spent with each one ranged from eight to twelve hours.

**Participants**

Participant L is serving in her first year as the campus librarian. Prior to this position, she taught in a self-contained fourth grade classroom for seven years. As librarian, her duties include general library duties as well as instruction for all grade levels during ancillary. Another duty, which she is beginning to take on, is to work as a media assistant on campus for teachers. As such, she is responsible for assisting other
teachers with technology needs. At the beginning of the coaching program, her overall technology efficacy score was only two, on a scale from one to five, where five was the highest rating. She felt as though she knew the basics of computer operations, especially with Word, Excel, and PowerPoint. Additionally she felt comfortable with basic e-mail operations. She also clearly stated that she felt she had a great deal of growth opportunity, and because a part of her library curriculum included technology standards, felt as this program would be of great benefit.

During the time of peer coaching, the primary focus of Participant L’s learning time was to focus on strengthening her own technology foundations with district and campus based technology platforms. One of the district’s initiatives is that students become more technologically savvy toward becoming “Global Graduates”. As such, Participant L needed to focus on the goals aligned toward utilizing the district’s digital learning platform called the HUB. In addition to learning the basics of creating online and blended learning content utilizing the HUB, Participant L’s time also focused on instruction in Internet Safety practices, photo sharing via Google Photos, and the basics of iPad functions. During the coaching sessions, the coach worked toward teaching Participant L the basics of using all of these tools toward moving forward with integrating more iPad apps in her instruction.

Participant J is employed at the school as the fifth grade math teacher. She is in her fourth year at the school and her twelfth year of teaching. She serves all of the fifth grade students for instruction in math. At the beginning of the program, her technology efficacy score was a three. She felt comfortable with the basic technologies on campus,
but stated that her use of technology in the classroom could be better. She desired to engage her students in more meaningful ways, over simply teaching to the test.

Participant J’s learning began with one of her primary concerns. She and her entire grade level wanted to begin to work to improve behaviors among their students. Because of this, she was eager to learn about ClassDojo. She was also eager to learn more about the HUB and create blended learning opportunities for her students so her time in coaching also focused on learning the basics of creating online content in the HUB. Finally, she felt as though her students were constantly being tested through state and district assessments, in addition to general classroom unit tests, so she wanted another way to gather formative data on her students learning. She and the coach worked to implement two tools to gather data of students’ understandings with the use of Plickers and Kahoot.

Participant R serves as the Reading Interventionist on campus and has been serving in her role for ten years. Prior to serving as Reading Interventionist, she taught in the classroom in a variety grade levels from second grade to fourth grade. She is serving in her eighteenth year of education. In the beginning of the program, Participant R’s technology efficacy level was one. Although she was fairly adept at the basic needs of Internet navigation and e-mail, she felt very limited with her knowledge of technologies related to instruction. Presently this year, her primary responsibility this year, is to serve as intervention and supplemental support to students and teachers in third through fifth grades.

Participant R’s time of learning was focused on ways to enhance what her teachers were already doing and utilizing. As such, one of the focuses of the teachers in
fifth grade, such as Participant J, became to enhance their skills in classroom management through the use of Classroom Dojo. Participant R worked with the coach to implement the basics of this tool. Additionally, Participant R’s time with the coach also focused on learning to input lessons created for a district initiative called VIF. The coach assisted Participant R with understanding the basics of the site and how to add content required to complete the lesson plan, lesson artifacts, and final reflections.

Participant B is employed on campus as a fourth grade reading and social studies teacher. She is serving in her twenty-first year of education and her tenth year on campus. At the beginning of the program her technology efficacy score was three. She stated that she felt as though she had a pretty firm handle on most things technology, however was still apprehensive about using technology beyond what she was already doing. At the beginning of the program her technology efficacy was a two. Students in her classroom were using laptops and desktops regularly for campus and district programs such as Istation and Reflex. She expressed that because she also serves the Gifted and Talented students of fourth grade, she wanted to work on some ways to engage them more with technology.

Participant B’s learning time with the coach was then focused first on the HUB so she could begin creating some online and blended learning lessons, as is expected by the district. Secondly, the coaching time focused using PowerPoint. Participant B wished to have her students create presentations at the end of a PBL unit that demonstrated their learning of Native American tribes for Texas History. The final project goal for Participant B was to work to utilize Glogster with her class. Because Glogster has changed from being free to being paid, the coach worked with Participant B with Biteslide
to have the students work on slideshow products, similar to PowerPoint, but on a different platform. Participant B expressed that she was excited to learn a completely new tool for her students.

Summary of Participant Information

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<tr>
<th>Participant</th>
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<th>Pre-/Post-Coaching Technology Efficacy</th>
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Results

In this particular study, the presence of the peer-coaching program has proven to be effective in making an impact on empowering teachers to utilize technology in the classroom. It also proved effective in engaging students more with their learning and with their teachers as sought by the research questions posed. The use of peer coaching with all four participants raised their technology efficacy levels and participants all explained that they felt more comfortable with their own use of technology and the use in the classroom.

Participant L showed a lot of growth in the coaching sessions as she went from being very apprehensive about trying new things to being able to navigate the HUB with
little struggle. In the last HUB coaching session, Participant L was able to create a lesson all on one page where students could access the links to a video read aloud, discussion board, sample product, and all objective content and instructions. A part of her growth in technology was also evident because in the beginning, she expressed that she felt as though the use of technology pulled away from some of the “more important” skills students should be learning. In the process of working with the coach, as well through discussing the ways that the blended learning lessons would be engaging students with higher-order thinking, as well as with improving communication skills with the fifth graders she designed the lessons for, she could see that technology did in fact have its place. Additionally, Participant L was successful in developing a lesson on Internet safety, utilizing resources she and the coach gathered together from district resources and online sites provided by the coach. She successfully gave her students the necessary information to helping them navigate the Internet to find valid research that is safe.

Finally, Participant L stated that her personal learning of Google Photos, for easily sharing photos, would be very beneficial for students to possibly creating a project in the future. Through her learning the basics of the iPad, she also felt less apprehensive about adding apps, which the students could engage with while they were with her in the library and plans to work further with the coach to find some that will be beneficial in her upcoming objectives.

As with Participant L, Participant J stated that through her time working with the coach she felt more positively toward technology in the classroom. After working with the coach to set up her own class and prepare parent letters, she successfully presented the toll to the students. She then shared ClassDojo with her entire team and they all began
working together to improve student behavior and parent communications utilizing this tool. Because the district is requiring teachers to plan lessons utilizing the HUB platform, Participant J stated that her time with the coach was also very helpful to actually go through the process together. She felt as though the initial training was not sufficient and the time working with the coach to build her lesson on exponents was both helpful to her and her students.

She added a variety of content in the form of files and links to online activities that aligned to her objectives. She successfully created the lesson and upon presentation of the first lesson, stated that students were overall successful with accessing the content and working through all of the tasks she added in the lesson. She stated that she was excited to being working on the second lesson after Thanksgiving break. In the upcoming weeks, the coach will continue to support Participant J with the HUB lessons as needed.

Finally, Participant J set up assessments for the two assessment tools and was excited about the ways that Plickers and Kahoot were able to engage her students with assessments in ways that the district and state tests do not. To introduce the apps, she created simple content in the form of addition, subtraction, multiplication, and division facts. This allowed students to engage with the tools with familiar content in order to learn how to use each of the tech pieces. Participant J stated that she saw her students became eager to test, if it meant using Plickers and Kahoot. Participant J plans to begin moving on to additional assessment tools, such as Socrative, at the coach’s suggestion. Participant J was eager to take on this challenge.

Participant R spent the least time in the coaching program, but also felt an improvement of technology efficacy. She stated that ClassDojo was a great tool to help
keep her students on task while they were with her for such short amounts of time. She also mentioned that being able to sync the information directly with the fifth grade team made the whole thing much more friendly. The coach worked with Participant R to set up the account and the classes of her students. After syncing the account on the iPad, Participant R quickly began using the tool with her students and noticed improved behaviors. She felt good about this first technology tool.

For the second integration Participant R worked with the coach to successfully navigate and input the required lessons into the online VIF system. At first, she felt very nervous and frustrated about the task of having to upload attachments of student artifacts from the project they completed, but after the time working with the coach on her own full lessons, she was then able to lead the entire ancillary team in uploading their own lessons, guiding through each step and growing her own comfort with the tool.

As with the previous participants, Participant B also showed gains in technology efficacy from the beginning to the end of the program. She worked through the different stages of creating a PowerPoint slowly with her students, modeling the process of adding text and uploading photos. In the process, she found that many students felt at ease with the use of the tool and even went on to add animations as they explored the software. The PowerPoint lessons created by her students were shared with the class. She stated that students were eager to share what they learned and created.

As a the second technology integration pieces, Participant B also wanted to work to create her digital lesson via the HUB. After the time with the coach, Participant B was able to add digital content for her lesson on regions of Texas. She added her objectives and instructions, video links, maps, discussion board, and an assessment. Students were
excited to work on the lesson in the HUB. Participant B stated that she saw that the same materials she would have covered in class were easily added and students were much more eager to work on it due to the use of technology. In presenting the lesson to the students, she was able to bring up the content and model the process and expectations. She then used the laptop cart to have students access the lesson. She felt as though this was something she is now looking forward to in the next nine-week cycle, rather than dreading it.

Finally, for her last technology integration, Participant B is in the process of having her students create products through Biteslide. Because has worked with her students on a variety of objectives on Expository text. Students are working on creating Biteslide to share what they have learned about non-fiction text features. She and her students are excited to see the products that everyone creates.

**Coache’s Reflections**

There are many implications that can be made from the time used for all participating in this study. The coach was able to success fully assist colleagues in implementing new technologies. This certainly seemed to have empowered these participants, as they were all eager to continue using the tools they tried as well as try additional resources suggested. The positive effects that the coaching had on these participants was significant in this study.

From the coach’s perspective, the chance to work with other educators and collaborate toward student success is very rewarding. This shows that process of coaching was very meaningful, not only to the participants, but also to the coach. Seeing what other teachers
are doing in their classroom with technology and becoming a support toward impacting
student learning beyond one’s own classroom is very fulfilling.

Final Reflections

The results of this study show the positive effects of peer coaching
within the elementary setting, but there is reason to believe that this process will benefit
any teacher willing to work with a coach to further their own technology usage. This
process showed that participants could show great growth in their own understanding of
technologies and possible applications for their students. An added benefit is the
collaboration that happens between coach and the participants also serves to make
planning easier and more effective. Just as the saying goes, two heads are better than one.
This can certainly be true with integrating technology. Coaches may see that they also
find new ways and tools that can meet the learning needs of teachers and students
through collaboration during peer coaching sessions.

While this type of professional development model is not currently
widely utilized, this study suggests that perhaps it should be implemented more often.
Through a great deal of time and commitment, this could be a great way to enriching the
technology integration of teachers all over the country. If schools everywhere focused on
growing their teachers in meaningful ways with technology, they would begin to see
student learning enhanced and students would truly become more prepared for the
demands of the 21st century.
References


