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A Technology Implementation Plan Using Group Professional Development Sessions, Peer Coaching, and Tutorial Videos

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Coaching, and Tutorial Videos

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Abstract

Technology is an integral component of a 21ˢᵗ century education. In order to streamline digital learning, many schools are turning to digital learning management sites like Schoology. Sites like Schoology allow educators to organize and deliver content to improve student learning for both in-person and at-home education models. Coupled with platforms like Google Workspace for Education, they are effective tools in a teacher's digital toolbox for integrating and managing online components of learning. However, their effectiveness is dependent on a teacher's digital fluency including teachers' self-efficacy. This school improvement plan seeks to build teachers' digital fluency, especially in these two platforms—Google Workspace for Education and Schoology. This will be accomplished through the use of group training sessions in a situated context, individualized peer coaching, and on-demand tutorial videos which cover topics the educators indicated as areas of need. The literature review contained in this plan establishes these three approaches as effective components of technology professional development.

Keywords: Google Workspace for Education, technology integration, peer coaching, professional development, school improvement plan

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With advances in technology, the skills students need to learn have evolved (Andrew, 2019). A 21st century education is learner-centered and rich in technology (Hartman et al., 2019). In a study of Generation Z students, less than half favored instruction led by the teacher (Global Research and Insights, 2018). With this educational evolution, teacher training and professional development has also shifted. Unfortunately, many educators have not been provided with the experiences to educate in this technology-rich setting (Hartman et al., 2019).

Freeman Academy is a small, Christian school in rural South Dakota. There are thirteen certified educators on staff who fill a variety of roles at this K-12 institution. Among this staff, there is a wide gap along the digital fluency continuum. The problem is some of the staff do not feel confident implementing technology effectively in the classroom. There has also been limited relevant professional development and support regarding technology implementation.

This school improvement project aims to bridge the digital fluency gap and help each teacher feel successful in implementing technology, and more specifically, Google Workspace in their classroom. Google Workspace has been specifically chosen as the focus of this project due to its relevancy since Freeman Academy is adopting Google Workspace in conjunction with its current learning management system (LMS)—Schoology. By supporting teachers in this manner, student learning outcomes will be directly impacted and improved.

The resources utilized in this project were primarily sourced from the educational research database—ERIC. The articles chosen came from scholarly journals and are peer-reviewed. The majority of the resources are from within the last ten years.

Review of the Literature

The purpose of this literature review is to identify current research and practice pertaining to effective technology coaching practices and technology implementation in the classroom. Specific consideration will be given to personalized professional development opportunities including on-demand digital options, one-on-one coaching models, and administrative roles in technology implementation. This literature review reveals a need for instructional technology coaches who offer personalized support for each educator as they navigate technology implementation that is supported by their administration in their respective classrooms.

Benefits of Technology in the Classroom

Using Web 2.0 tools such as Google Workspace for Education offers users many possibilities to enhance student learning and improve teaching (Pan & Franklin, 2011; Awuah, 2015). Likewise, the use of these tools is important to building necessary skills for 21st century learners (Andrew, 2019). One of these skills includes collaboration. The International Society for Technology in Education (ISTE) lists global collaborator as one of its student standards (ISTE, 2021).

Google Workspace for Education boasts of its ability to simplify collaboration (Google, 2021). Research has been done to determine advantages and limitations to using Google apps as well as its usefulness for the purpose of collaboration (Andrew, 2019; Awuah, 2015). Google's core apps—Docs, Sheets, Slides, and Forms—were utilized in these research activities. One study determined that participants found the Google apps helpful and useful for their learning (Andrew, 2019). Similarly, the Google apps have been examined for their effectiveness in collaboration. A study focusing its research on collaboration between educator and student found a significant growth in student self-efficacy with Google Docs and Slides. The qualitative data

revealed themes such as positive accessibility, instructor feedback and support, and ease of use (Edwards & Baker, 2010). Overall, the data supports Google's claim to simplify collaboration (Google, 2021), which provides educators with a platform to achieve ISTE standard 7: Global Collaborator (ISTE, 2021).

In addition to its collaboration features, Google Workspace for Education has been shown to increase student engagement (Awuah, 2015) as well as improve student learning (Awauah, 2015). The implementation of Web 2.0 tools and Informational Communication Technologies (ICT) such as Google has become essential to teaching and learning in the 21st century classroom (Awuah, 2015). Its effectiveness depends on the student's and the educator's digital fluency and adaptability, though (Awuah, 2015; Middleton & Murray, 1999; Pan & Franklin, 2011). Interestingly, research suggests successful technology integration is dependent on a teacher's self-efficacy, professional development, and administrative support (Pan & Franklin, 2011; Sehgal, 2016).

Teacher Self-Efficacy and its Impact on Technology Implementation

Self-efficacy is one's belief in his or her abilities and a subjective reflection of what one believes he or she can do with those abilities (Bandura, 1977). It is area specific, so one may have high self-efficacy in one area and low self-efficacy in another (Kwon et al., 2019). For example, a teacher may have high self-efficacy in teaching reading while having a low self-efficacy in teaching math. Self-efficacy is an important factor to consider when asking teachers to implement technology in the classroom.

Since the discovery of this phenomenon, it has been researched and applied to many areas including technology implementation in the classroom (Holden & Rada, 2011; Kwon et al.,

2019; Pan & Franklin, 2011). This research has revealed some trends occurring between teacher self-efficacy and technology integration. Low self-efficacy regarding technology use translates into low technology integration in the classroom (Pan & Franklin, 2011). Another revealed trend is that a higher level of teacher self-efficacy indicates a higher belief in one's ability to use new technology in the classroom and trouble-shoot any technology issues that may arise (Kwon et al., 2019).

Teachers who have low self-efficacy toward technology are hesitant to incorporate technology into their classroom (Holden & Rada, 2011; Kwon et al., 2019; Pan & Franklin, 2011). Since self-efficacy is domain specific, even experienced teachers and teachers who have high self-efficacy toward their ability to teach may have low self-efficacy toward technology implementation. This is especially true if teachers have not had significant technology exposure or training (Kwon et. al., 2019).

Educators who have had considerable technology usage and training have been found to have high self-efficacy toward technology. In addition, they are more likely to implement new technologies in the classroom (Holden & Rada, 2011). Implementing technology in the classroom has shown to improve education (Hartman et al., 2019; Serin & Bozdag, 2020). Self-efficacy has been found to improve teacher effectiveness which influences student achievement (Sehgal et al., 2016). It is then reasonable to conclude that high self-efficacy regarding technology, and including technology in the classroom, will lead to improved student success.

Understanding how self-efficacy impacts technology implementation which reflects student achievement informs the need to increase it. Two important factors that have been identified to indicate how to enhance teacher's self-efficacy are appropriate and relevant professional development experiences as well as administrative leadership (Kwon et al., 2019;

Pan & Franklin, 2011; Sehgal, 2016). In order to build self-efficacy among educators, they need professional development that is rooted in experienced-based activities (Liu & Phelps, 2020) and support from administration (Sehgal, 2016).

Professional Development on Technology Implementation

Research has shown that effective professional development experiences focusing on technology implementation come in three main forms: group training sessions that are rooted in situated context, peer coaching, and video trainings (Kwon et al., 2019; Rice et al., 2020; Sugar, 2005). Additionally, one important aspect of all professional development options is relevancy to the attendees' teaching situation (Liu & Phelps, 2020; Unger & Tracey, 2013). In order for knowledge to be retained, it needs to be applicable to the setting in which it will be used (Liu & Phelps, 2020).

Before discussing each of these types of professional development experiences, it is important to further explain the commonalities across all of them. Unger & Tracey (2013) completed a comprehensive study of effective technology professional development. In that study they concluded relevancy and practicality are extremely important factors. There should be access to resources after the experience such as tutorial videos. Also, the professional development should offer flexibility to work independently. Finally, the experience should offer clear instructions and feedback (Unger & Tracey, 2013). These findings are supported by similar, but more-focused studies of technology professional development (Liu & Phelps, 2020; Ma et al., 2018; Sugar, 2005; Sugar & Slagter van Tryon, 2014).

Unger and Tracey (2013) also identified seven successful components of technology professional development: relevant, educational, accessible, reactive, interactive,

straightforward, and instructive. While utilizing these components, professional development exercises should include learner-centered and applicable technology that incorporates both pedagogy and planning time (Unger & Tracey, 2013). Since the ultimate goal of all technology integration is to increase student learning, it is important that all professional development opportunities support that (Liu & Phelps, 2020; Unger & Tracey, 2013).

Group technology training sessions can occur via a variety of mediums like self-paced training courses (Fulgence, 2020), school-wide in-services (Unger & Tracey, 2013), and online professional development courses (Liu & Phelps, 2020; Ma et al., 2018; Unger & Tracey, 2013). The distinguishing factor of this type of professional development from the others examined in this review is that it is not individualized to meet the needs of the learner, but it is organized with specific purpose and content. For the purpose of this literature review, this type of professional development experience will be referred to as group training sessions.

Group training sessions can be an effective form of technology professional development (Unger & Tracey, 2013); however, there are some key components that need to be included in order for it to serve this purpose. In addition to the previously identified characteristics of a successful professional development experience from the Unger & Tracey (2013) study, a group training session must connect directly to each teacher's classroom (Sugar, 2005). The content used and learned in the session must be adaptable to be applied to the teacher's classroom. In a study determining knowledge retention after professional development experiences, Liu and Phelps (2020) found that there is significant knowledge loss unless the experience is applied to the teacher's setting. This application to the classroom is the definer in situated professional development (Sugar, 2005).

Another determiner of knowledge retention and effective group training sessions is follow-up and accountability (Sugar, 2005). In many traditional workshops and trainings, there is no follow-up afterwards to determine the success of the learned knowledge (Liu & Phelps, 2020). The addition of this accountability strengthens the effectiveness of group training sessions.

While group training sessions can be an effective form of technology professional development (Unger & Tracey, 2013), they can be enhanced with the addition of individual technology coaching sessions (Ma et al., 2018; Sugar, 2005; Sugar & Slagter van Tryon, 2014). A technology coach is one who meets the individual technology needs of educators at a school or within a school district (Ma et al., 2018; Sugar & Slagter van Tryon, 2014). Peer coaching reflects this with the establishment of an instructional technology coaching program at one's own school or district (Ma et al., 2018). For the purpose of continuity throughout this paper, peer coaching will be used to refer to any type of individualized technology coaching experience.

Peer coaching has been proven to have many benefits to the educators involved. These benefits include overcoming external and internal barriers to technology implementation (Sugar, 2005), individualizing the content to the teachers' needs (Liu & Phelps, 2020; Ma et al., 2018; Sugar, 2005), and building digital fluency (Fulgence, 2020). All of these are important factors to consider when implementing technology.

External and internal factors have been shown to prevent teachers from implementing technology into their classroom (Kwon et al., 2019; Sugar, 2005). Lack of technology or access issues are both examples of external barriers (Sugar, 2005). Self-efficacy and autonomy are considered internal barriers to technology implementation (Ma et al., 2018; Sugar, 2005). These factors are considered and can be overcome in proper peer coaching (Unger & Tracey, 2013).

Given the nature of peer coaching, these barriers are addressed in individualized and applicable manners (Kwon et al., 2019). One way a peer coach supports his or her educator is by assisting in troubleshooting problems with technology. They help fix technical issues that may arise which are external barriers (Sugar, 2005). Other tedious tasks like uploading programs or software maintenance and updates are external barriers that deter hesitant educators from incorporating technology into their classroom (Hartman et al., 2019). Learning how to address these issues as they arise is an effective means of peer coaching and overcoming external barriers (Hartman et al., 2019). However, supporting educators as they learn to overcome internal barriers is what will sustain their technology use.

Internal barriers, such as self-efficacy, can be addressed and overcome through frequent and collaborative coaching sessions (Sugar, 2005; Unger & Tracey, 2013). An important aspect of these sessions when addressing internal barriers is setting a tone of empathy and support (Ma et al., 2018; Sugar, 2005). Peer coaches, intending on building the self-efficacy of their educator, should focus on meeting the immediate needs without pushing a specific technology agenda (Kwon et al., 2019; Sugar, 2005). It is also important to use non-technical terminology when coaching. If coaches establish a coaching relationship built on empathy, support, and patience, these internal barriers are shown to be overcome (Sugar, 2005).

The factor that sets peer coaching apart from other professional development experiences is its ability to individualize the content (Slagter van Tryon & Schwartz, 2012; Sugar, 2005; Sugar & Slagter van Tryon, 2014). Teachers are met where they are at in their digital fluency journey as opposed to a one-size-fits-all approach. In these sessions, the focus is on pedagogy and the respective learning environment of the teachers (Sugar, 2005; Unger & Tracey, 2013). The projects are authentic and relevant where student outcomes are the driving factor (Slagter

van Tryon & Schwartz, 2012; Sugar, 2005). Additionally, the coaching experience is ongoing

and reoccurring (Sugar, 2005; Sugar & Slagter van Tryon, 2014). This is important for both the

coach and the educator. The coach can take time to research or find resources for the educator.

Also, the educator has multiple opportunities to learn and ask questions.

A third benefit of peer coaching is its ability to build digital fluency among teachers in a

21st century education (Fulgence, 2020). In the 21st century, technology is always changing and

progressing. Students need new skill sets compared to previous generations of students (Andrew,

2019), and teachers need to be digitally fluent in order to teach these new skill sets (Fulgence,

2020). However, many teachers do not feel adequately prepared to effectively utilize technology

in the classroom (Hartman et al., 2019; Sugar, 2005).

Digital fluency is both knowing how to use technology and how to create significant

digital content easily (Fulgence, 2020). Digital fluency within the educational construct refers to

using teachers' understanding of how to innovatively use digital tools to meet student needs and

achieve learning objectives (Fulgence, 2020). This is the foundation for the educational shift

from passive to active learners (Hartman et al., 2019).

In this shift, the teacher's role changes from information giver to educational facilitator

(Hartman et al., 2019). The learning environment evolves from being teacher-centered to learner-

centered (Hartman et al., 2019). A peer coaching program can empower educators through this

dramatic educational evolution (Fulgence, 2020; Hartman et al., 2019). One way to accomplish

this is by facilitating a professional learning community among the teachers in a school (Sugar &

Slagter van Tryon, 2014). In this professional learning community, the peer coach establishes an

environment of collaboration and support. While the coaching is still individualized, the

community provides a place for teachers to share ideas and resources as well as accountability

(Sugar & Slagter van Tryon, 2014). By increasing digital fluency through peer coaching and developing a professional learning community, student learning is positively affected (Fulgence, 2020; Sugar & Slagter van Tryon, 2014).

The third component of a successful technology professional development is video tutorials. Research indicates that follow-up and continuous access to resources sustains a successful technology integration (Liu & Phelps, 2020; Sugar & Slagter van Tryon, 2014; Unger & Tracey, 2013). Video tutorials can be used to provide on-demand professional development and support for educators. Rice et al. (2020) identifies two important components of video tutorials. First, they should be specific and model best-practices for the intended purpose of the video (Rice et al., 2020). Additionally, videos should be concise and straight-forward without adding unnecessary information (Rice et al., 2020). Only one concept should be featured in a video. Instructional videos or video trainings offer continuous support for the educators without using a lot of resources (Unger & Tracey, 2013).

Administrative Support for Technology Implementation

Finally, another contributing factor to an effective technology integration and building of teacher self-efficacy is administrative leadership and support (Gonzales, 2020; Machado & Chung, 2015; Sehgal, 2016). Technology integrations, like one-to-one laptop programs, have been shown to improve student outcomes (Gonzales, 2020). However, the success of these integrations is dependent on proper implementation (Gonzales, 2020; Machado & Chung, 2015). There are two ways administrative roles in technology integration are influential: creating a vision for the project and overcoming barriers (Gonzales, 2020; Machado & Chung, 2015).

Creating a clear vision that is rooted in pedagogy and curriculum is the most effective way a principal can implement a technology plan (Machado & Chung, 2015). In order to do this, the administrator needs to be informed and have clear intentions for teachers and students (Gonzales, 2020; Machado & Chung, 2015). If the principal is trained in the technology and has had significant experiences with it, then the project is more likely to succeed (Machado & Chung, 2015). Additionally, having clear intentions for the plan and its stakeholders will have a positive affect on the implementation (Machado & Chung, 2015). Training and vision will also have a positive impact on overcoming project barriers.

Just as there are external barriers for teachers integrating technology in the classroom (Hartman et al., 2019; Sugar, 2005), principals experience barriers in implementing a technology project (Gonzales, 2020; Machado & Chung, 2015). These barriers include budget and teacher buy-in (Gonzales, 2020).

While initial money and resources can commonly be sourced for new technology programs through grants and donations, administrators find it difficult to sustain programs due to lack of upkeep funds (Gonzales, 2020). They struggle to source the funds necessary to purchase new technology as the initial tools may break or become obsolete. Once a technology implementation has commenced, there must be necessary funding to maintain and sustain it (Gonzales, 2020).

Another barrier principals need to overcome is teacher buy-in (Gonzales, 2020). The key to overcoming teacher buy-in is adequate professional development (Gonzales, 2020; Machado & Chung, 2015). This professional development should be ongoing and be indicative of the intentions set forth by the project vision (Machado & Chung, 2015). When professional development is aligned with the project goals, continuous, and individualized, there is a positive

effect on the outcome of the project (Machado & Chung, 2015; Unger & Tracey, 2013). In

addition, it also helps build teacher buy-in and self-efficacy (Gonzales, 2020; Sehgal, 2016).

Conclusion

The literature has revealed important characteristics of effective technology professional

development. Among these characteristics is a theme of learner-centered activities that are

relevant to each unique learning environment and meet the needs of each educator in addressing

external and internal barriers on technology integration. These can be accomplished through

group sessions, peer coaching, and video tutorials. Additionally, they all serve as effective

professional development to build teacher self-efficacy. These themes serve to inform best-

practices used in technology implementation projects.

Need for Plan

District Information

Freeman Academy is a private, Christian school in Freeman, South Dakota. It serves approximately 75 students populating kindergarten through twelfth grade. There are thirteen certified teachers on staff. Although Freeman Academy is a private school, it is fully accredited by the state of South Dakota as well as the accreditation agency—Cognia. It is also a part of the Mennonite Secondary Education Council (MSEC). In addition to these credentials, Freeman Academy is ranked as the best private K-12 school in South Dakota as well as the best private high school in South Dakota.

Freeman Academy's history dates back to its beginnings in 1900 as a teacher preparatory school. Throughout the last 121 years, Freeman Academy's identity has changed, however it has always remained an institution grounded in faith and academic achievement. A recent visit by an alumnus revealed the evolving roles of a specific room in one of the campus buildings that is nearly 100 years old. Several decades ago, it was a sewing room. Now, it is home to fifteen computers serving as the elementary computer lab. This evolution is also evident in curricular areas. In 2018, the learning management system, Schoology, was implemented as a means of facilitating technology integration in every classroom. Two years later, in response to the Covid-19 pandemic, Google Workspace for Education was added to Freeman Academy's digital toolbox. Throughout these implementations, there has been little to no professional development offered for the educators. This has led to unorganized and inconsistent technology implementation by the teachers.

District Need

In a survey given to the certified staff at Freeman Academy (Appendix A), both actionable and measurable data was gathered. The actionable data was used to develop professional development experiences for the staff. These took place in the form of both whole-group and individualized coaching sessions.

The measurable data gathered from the surveys serves to indicate growth in three specific areas: teacher confidence with Google Workspace, teachers' use of Google Workspace, and teachers' integration of Google Workspace with Schoology.

Teacher Confidence with Google Workspace

The initial data from the survey indicates that most of the teachers feel somewhat confident with using Google Workspace. On a ten-point scale where ten represents complete confidence in all areas of Google Workspace, the average score from the certified educators was 6.5. Within this modest score, there was one response that needed a clarifier. The kindergarten teacher feels confident using Google Workspace with a self-score of eight. However, in a one-to-one coaching session with her, she indicated she does not feel confident integrating it with kindergarteners. This became the primary focus of her coaching sessions.

Teachers' Use of Google Workspace

To measure this area, the teachers were asked to what degree they have incorporated Google Workspace into their courses. This was measured on a scale of 0-4.

0-They have not used it at all.

1-They have used it for file storing.

2-Their students have used it for storing files specifically for their course(s).

3-They and/or their students have created a file using a Google App (Docs, Slides, Sheets, Forms, etc.) for their course(s).

4-They have created an assignment in Schoology using the Google Drive Assignments button.

The average score from the teachers' results was 1.8 indicating most have only used Google Workspace for file storage as opposed to engaging, learner-centered activities assigned through Schoology.

Teachers' Integration of Google Workspace with Schoology

This specific area was measured by determining if the teachers knew and/or used the Google Drive Assignments button in Schoology. This specific feature of Schoology links each teacher's Google Drive with their Schoology account allowing them to assign specific activities and lessons from Google. While it is not the only way to integrate Google Workspace with Schoology, it is the simplest way. The initial survey results indicated that only one teacher knew what this button is and has used it.

In addition to these quantitative measures, teachers were also encouraged to share specific concerns or questions they may have about technology. The answers ranged from organization and knowing where to find things to having enough time to figure out how to use these tools effectively. One particular response said "I don't know what I don't know." This statement represents many educators and sums up the need for a technology coaching program.

While Freeman Academy is a high-achieving school with admirable credentials, it is apparent there is a need for technology training and coaching opportunities. The specific scope of these opportunities will be on utilizing Google Workspace and integrating it with Schoology.

This will serve as a solid foundation for technology implementation on which future technology coaching projects can build.

In order to implement this school improvement plan, approval was needed from administration. The Head of School was enthusiastic about the potential for this program and encouraged collaboration with the Academic Dean and technology coordinator. The academic dean worked out a schedule for whole-group instruction sessions with the plan implementer. The school's technology coordinator also provided technical assistance as necessary. The academic dean and technology coordinator also supported the plan implementer in determining project goals.

Goals for Plan

There are three main goals with this technology implementation. The first is to improve teacher confidence with Google Workspace for Education, improve teachers' use Google Workspace for Education, and finally to improve teachers' use of Google Workspace for Education and its integration with Schoology.

The first goal speaks specifically to teacher self-efficacy and their confidence with using technology. As Freeman Academy transitions to fully using Google Drive for storage management, it is imperative that the teachers feel confident navigating Google Workspace and understanding its components. One specific question on the teacher survey asks the teachers to rate their confidence using Google Workspace for Education. By asking this question again at the project's culmination, this goal can be measured.

This goal will be achieved primarily through peer coaching with each teacher. The plan implementer will meet each teacher where they are at with their current confidence level and help them gain experience and understanding with Google Workspace for Education. The frequency needed for the peer coaching will be determined on an as-needed basis. Some teachers will need more time with the coach and others will require less time. However, each peer coaching session can help improve the teacher's confidence level. Additionally, the on-demand tutorial videos can serve as a support for the teachers if they struggle to remember the specific steps to achieve their desired objective.

The second goal focuses on the extent teachers utilize Google Workspace for Education in their unique learning environments. To measure the extent teachers utilize Google Workspace, this component is broken down into four levels: teacher file storage, student file storage for their class, implementation of a Google App that is not linked through Schoology, and assigning a

Google App assignment through Schoology. The teachers rated their usage prior to the plan's

implementation. Throughout and at the end of the implementation, the teachers will rate their

usage again to indicate growth of this goal.

This goal will be achieved through all the components of the project: peer coaching,

group training sessions, and on-demand video tutorials. Each teacher will be asked to utilize at

least one Google App in a way that supports their distinctive learning situations. These will be

identified during the peer coaching sessions. During the second in-service, a portion of it will be

designated to working on these projects. Finally, the tutorial videos can support the teachers as

necessary.

The last goal of the project indicates to what extent Schoology is utilized in their

classroom specifically with Google Workspace for Education. There is a specific feature of

Schoology called Google Drive Assignments. This feature allows teachers to assign Google

Workspace assignments through the LMS creating a seamless integration. This goal can be

measured by assessing the teachers' initial levels of understanding and usage of this feature. The

pre-project survey broke it down into three levels: yes, it is used in their classroom; no, and they

do not know what it is; and no, but they understand what it is. The survey also allows the option

of "I'm not sure." The ideal success of this goal is that most of the teachers respond with using it

in their classroom after the project implementation. However, this may not suit the needs of

some classrooms, so it is important that teachers at least understand what it is in case that need

ever arises.

This goal will primarily be achieved through the group sessions, but it will also be

supported through peer coaching and tutorial videos on an as-needed basis. One of the sessions

will be primarily focused on explaining the aspects of this feature. Additionally, specific

questions can be asked during peer coaching sessions.

      With technology being an important aspect of a 21st century education, educators need to

feel confident with implementing it in their classroom, especially when utilizing district-wide

platforms like Google Workspace for Education and Schoology. These goals reflect this need

and educational trend.

Plan Implementation

Infusing technology into the classroom and curricular content is an integral component of

a 21st century education (Andrew, 2019). Current students are digital natives with an innate

curiosity and understanding of technology. However, today's educators represent a variety of

digital experiences. It is imperative that all educators have a foundation of technological skills

and knowledge on which to build and learn, along with the necessary support to develop that

foundation (Middleton & Murray, 1999). This is where a technology coaching program excels.

Both internal and external barriers have been identified that influence teacher technology

use (Ertmer et al., 2012; Sugar, 2005). This school improvement plan seeks to address these

barriers through the development of a technology coaching program. The specific barriers

addressed are teacher confidence and self-efficacy with technology (internal) and lack of relevant

professional development and support (external). This coaching program focuses its efforts on

two specific digital platforms which will provide a solid foundation on which to integrate

additional technological tools in the future. These platforms are Google Workspace for

Education and Schoology. While both programs have been previously implemented at Freeman

Academy, the school data gathered from the educator survey indicates a lack of organization and

understanding of how these two programs work together.

The coaching program instituted in this school improvement plan has three components.

The first component is a series of group coaching sessions that will take place during pre-

determined staff meetings and in-service dates. The second component consists of personalized

one-on-one coaching sessions with each certified educator at Freeman Academy. The third phase

is a playlist of training and instructional videos that provide an on-demand coaching experience

to support the teachers. Together, these phases will serve to achieve the goals of the project.

They also address the concerns and areas of improvement identified in the initial teacher survey.

The first component of the project consists of two group technology coaching sessions.

The first session took place during a regular staff meeting in September lasting approximately

thirty minutes. The topic of this session was the Google Drive Assignments button in Schoology.

This particular feature of Schoology seamlessly integrates Google Drive content and assigns it in

Schoology which is the learning management system for Freeman Academy. Understanding how

to use this feature is integral to using Schoology and Google Workspace in conjunction with one

another. The initial survey data gathered from the teacher survey indicated that only one teacher

knew what this feature was and has used it. By making this feature the focus of this session, the

experience is both relevant to the classroom setting and addresses the external barrier of relevant

professional development. One of the key beneficial factors of a technology professional

development experience is relevancy (Unger & Tracey, 2013). An effective professional

development experience, especially focusing on technology, will be relevant to the classroom

setting (Unger & Tracey, 2013).

The second group session will take place during an in-service day in November

specifically set apart for the purpose of continuous improvement. This session will be two hours

long and focus on the features of Google Workspace for Education specifically the apps Docs,

Sheets, Slides, and Forms. The initial survey data indicated that most of the teachers feel

confident with these apps, so the training will be primarily driven towards more advanced

features of these apps that can move student activities into more engaging and interactive

experiences. This will be approached in a situated context where the teachers will interact with

these apps in a similar way in which their students utilize the technology. This method is rooted

in the situation cognition theory in which the educator is learning by doing and creating

knowledge within the applicable context (Liu & Phelps, 2020; Sugar, 2005; Unger & Tracey,

2013). The teachers will be enrolled in a Schoology course as students where they will

experience the effect these apps have on student learning. Additionally, the content they will be

interacting with in these app assignments will be focused on pedagogically sound technology

integration. The SAMR technology framework and ISTE technology standards will be

introduced.

Following these group sessions, participants will provide feedback for the project

implementer in which to assess project effectiveness and formative data on which to guide

further instruction.

The next component of the school improvement plan focuses specifically on both teacher

confidence and self-efficacy as well as relevant professional development and support through

the use of individual coaching sessions. The literature review established this method of

professional development to be among the most effective at creating lasting and relevant learning

experiences for the educators (Sugar, 2005; Sugar & Slagter van Tryon, 2014). The data gathered

indicating the need for this plan suggested all teachers do not feel confident in their ability to use

technology successfully in the classroom. Thus, professional development focusing on building

teacher self-efficacy is necessary.

The plan implementer will meet with each certified teacher to address three specific

areas: document storage, Google Workspace and Schoology integration, and any other

technology assistance the educator may need. Freeman Academy is in the process of

transitioning away from network server storage to using the Google Drive. These individual

coaching sessions offer the opportunity to help each educator understand this transition and how

it impacts them. Additional data gathered from the teachers indicated that individual coaching

sessions are an applicable and appropriate means of providing relevant professional

development. This is supported by research as well (Liu & Phelps, 2020; Ma et al., 2018; Sugar,

2005).

Each classroom has its own unique needs and learning culture. By working individually

with each teacher, these learning cultures can be respected while meeting their individual needs.

One example of this is the multi-grade first through third grade classroom. This unique setting

presents its own challenges for technology integration, namely the variety of technological

experiences represented within the classroom. Schoology recently rolled out a new elementary

interface. This classroom is a great place to try this interface. While the learners in this classroom

may not be ready to use the product of the Google Drive Assignments feature in Schoology, they

can benefit from this new elementary interface as they learn to navigate a digital world.

Additionally, each educator carries with them a variety of digital experiences and levels

of confidence. On the initial survey, the kindergarten teacher indicated a high level of confidence

with Google Workspace for Education; however, she expressed concern for implementing it with

such young learners. The focus of her coaching experience was on creating a collaborative

Google Slides experience that created a pattern book while focusing on her learners gaining a

new technology skill—copy and paste. This activity overlapped literary standards with

technology skills.

A key component of a successful coaching experience is building a respectful

relationship between coach and educator that embodies a spirit of empathy and encouragement

(Sugar, 2005). These individual sessions offer a chance for the educators to be met where they

are at in their technology implementation journey. Specific and relevant questions can be asked

and addressed on an as-needed basis. This type of coaching experience has been shown to

improve teachers' confidence in integrating technology in the classroom (Sugar & Slagter van

Tryon, 2014).

The last portion of this school improvement plan will be to create and curate instructional

videos and tutorials that serve as on-demand professional development for the educators.

Throughout the individual coaching sessions and group sessions, the plan implementer made

notes on concepts that would be helpful to have videos for. This on-demand resource can be

updated as needed. It also serves to solve one of the major barriers of a technology coaching

program—time. This was also a concern shared by educators on the initial survey completed by

the teachers. The educators can access the videos whenever needed and can request specific

support as well. Instructional videos with specific purposes have been shown to improve

educator outcomes (Rice et al., 2020).

The primary resources needed for this school improvement plan were already in place:

Schoology and Google Workspace for Education. Since these were two platforms the district had

previously implemented, the usernames and logistical resources were already established. The

technology needed for the instructional videos is Screencastify which the plan implementer

already has access to. Perhaps the most important resource for this plan is time. The plan

implementer has secured time through the administration to present at staff meetings and in-

service trainings as well as meet with the teachers individually during prep times.

The main barrier the plan implementer has experienced is teacher buy-in. There have

been some educators with multiple decades of teaching experience who have been hesitant to

work with the plan implementer individually. This could be due to a lack of confidence in

technology or a lack of interest in incorporating technology into their classroom (Kwon et al., 2019).

The success of this project is determined by a series of surveys filled-out by the educators receiving the training. Each of the three goals of this project will be measured by survey questions tailored to measure these goals: teacher confidence, teachers' use of Google Workspace, and the teachers' use of Google Workspace with Schoology. The means of each of these scaled questions will be evaluated and compared to show a measurable outcome. If there is growth with each desired area, that will determine project success.

Assessment

Multiple methods of data collection were used for this school improvement project. The majority of the data, including the measurable data, was gathered by pre-project (Appendix A), mid-project (Appendix B), and post-project (Appendix C) surveys. The surveys were instituted using Google Forms and the data was analyzed using Google Sheets. Additionally, data was gathered during individual coaching sessions specifically as formative data. The implementer will use this data to determine the subjects of the instructional videos that will be made. These videos serve as on-demand professional development and technology coaching for the teachers and staff at Freeman Academy.

The measurable data gathered from the Google Forms surveys serves as the catalyst as the determiner for project success. The three main criteria of the project were teacher confidence, teachers' use of Google Workspace, and the teachers' use of Google Workspace with Schoology. The surveys were specifically designed with these determiners.

The Google Forms survey was administered in September prior to any instructional coaching experiences: either group or individual sessions. This data provides a baseline on which to measure the project's progress. Follow-up surveys were sent out after each group coaching session and one round of individual coaching sessions. The mid-project survey was administered in October following the first group coaching session. A final survey will be administered after the last group coaching session in November. A comparison of survey means will be used to analyze the data and thus determine the project's efficacy.

The project will be deemed a success if there are adequate gains in the three main goals of the project: teacher confidence, participation in Google Workspace, and participation in

Google Workspace integrated with Schoology. For teacher confidence, a mean score of at least

eight is desired. In participating in Google Workspace, an increase of implementation to a level

three would indicate project success. Finally, for the third category, Google Workspace

integrated with Schoology, a total implementation level three from all of the teachers is required

for success. This level indicates that all of the teachers are familiar with the Google Drive

Assignments feature in Schoology. It is acceptable that some teachers may not find it applicable

to use regularly in all their classes like band. That is why a level three is acceptable compared to

a level four where all teachers use it in their classroom.

The project data will be shared with Freeman Academy's Academic Dean and Head of

School with the intention of developing a permanent technology coaching program. This data

will also be shared with the teachers during an in-service in February along with a follow-up

technology training session. The on-demand training videos that were created from the formative

data gathered during coaching sessions will be shared with the teachers and staff at a weekly

staff meeting and shared digitally with them via Schoology.

Conclusion

This school improvement project is a multi-faceted approach to executing an organized and cohesive Google Workspace for Education and Schoology technology integration. While these are two platforms that have been used previously by Freeman Academy, the educators were struggling with confidence in using them, along with understanding how they work together. In addition, the district is transitioning to fully using Google Drive for storage management school wide.

This project utilized individualized peer coaching, group coaching sessions, and video tutorials as means to achieve the stated goals. These goals were improving teacher confidence levels when using Google Workspace for Education, increasing the extent to which teachers use Google Workspace for Education, and improving teachers' integration of Google Workspace and Schoology.

The results of this project will impact Freeman Academy in a variety of ways. While the teachers will gain confidence when utilizing technology in their classroom and increase their digital toolbox, the most impacted group will be the students. By having an organized approach to Google's integration with Schoology, the students have clearer assignment expectations. Teachers who feel confident in using technology will also include technology in more engaging and active ways rather than passively. Additionally, they will be exposed to a variety of technological tools and assignments which will help them gain skills necessary in a 21st century education.

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Appendix A

Initial Teacher Survey: September (Need for Plan)

Google Integration

Google is rolling out a program beginning in July 2022 for all current schools to be given a large amount of free storage. The goal is to be utilizing Google Workspace as opposed to the Common Drive storage by the end of the '21-'22 school year. The purpose of this form is to gauge your current Google usage and confidence level as well as the extent to which you have integrated Google Workspace for Education with Schoology. Additional questions are also present to inform your individual coaching experience.

Please return this survey by 8:00 A.M. Saturday, September 18th.

🚫 abradley@freemanacademy.org (not shared) Switch account ☁

* Required

What is your name? *

Your answer

How many courses do you teach? *

Your answer

What age group do you teach where you utilize technology: K-6, 7-8, 9-12? (choose all that apply) *

Your answer

Have you used your school Google account to login to Google Chrome browser? Example: abradley@freemanacademy.org *

◯ Yes

◯ No

◯ I'm not sure.

Do you use your Google Drive to save files? *

○ Yes

○ No

○ I'm not sure.

Where do you normally save files? *

○ My Computer

○ Common Drive

○ Google Drive

○ I'm not sure.

Have you used the Google Drive Assignments button in Schoology? *

○ Yes

○ No, and I don't know what that is.

○ No, but I understand what that is.

○ I'm not sure.

Have you used the Google Drive Assignments button in Schoology? *

○ Yes

○ No, and I don't know what that is.

○ No, but I understand what that is.

○ I'm not sure.

How comfortable do you feel using Google Workspace (Google Drive and Google apps like Docs, Sheets, and Slides)? *

1 2 3 4 5 6 7 8 9 10

I do not know what this is. ○○○○○○○○○○ I feel confident in all of these areas.

Up to this point, what degree do you or have you incorporated Google Workspace into your courses? *

○ 0- I have not used it all.

○ 1- I have used it for file storing.

○ 2- My students use it for file storing (specifically for my course).

○ 3- I have created a file using a Google App (Docs, Slides, Sheets, Forms, etc.)/My students have created a file using a Google App for my course(s).

○ 4- I have created an assignment in Schoology using the Google Drive Assignments button.

○ Other: _____

Do you have any specific questions?

Your answer
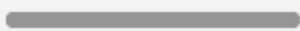
Submit   ▬▬▬▬▬▬▬▬▬ Page 1 of 1   Clear form

Appendix B

Mid-Project Survey: October

Technology Coaching Experience: Mid-Project Assessment

The purpose of this survey is to gather mid-project assessment data and help inform future coaching sessions. Please return surveys by 8:00 A.M. Saturday, October 16th. Thank you!

abradley@freemanacademy.org Switch account

* Required

Email *

Your email

Have you used the Google Drive Assignments button in Schoology? *

○ Yes

○ No, and I don't know what that is.

○ No, but I understand what that is.

○ I'm not sure.

Is the Google Drive Assignments feature in Schoology a relevant option for your learning environment? *

○ Yes

○ No

○ Possibly, but I do not know the best way to try it.

Did you find that the group session on September 27th was a relevant professional development experience?

○ Yes

○ No

○ I was not there.

Do you have any specific feedback from that session?

Your answer

Is there a topic you would like to learn more about in regards to technology implementation?

Your answer

How comfortable do you feel using Google Workspace (Google Drive and Google apps like Docs, Sheets, and Slides)? *

1 2 3 4 5 6 7 8 9 10

I do not know what this is. ○○○○○○○○○○ I feel confident in all of these areas.

To what extent do you agree with these statements. *

	Strongly Disagree	Somewhat Disagree	Neutral or Non-Applicable	Somewhat Agree	Strongly Agree
Individual coaching sessions help me gain confidence in using technology in my learning environment.	○	○	○	○	○
Individual coaching sessions are a relevant professional development opportunity for me.	○	○	○	○	○

Submit   Clear form

Appendix C

Post-Project Survey

Google Integration

The purpose of this survey is to determine this project's efficacy. The questions are similar to the ones answered in the initial survey (September) to allow for measurable outcomes.

abradley@freemanacademy.org (not shared) Switch account

* Required

Have you used your school Google account to login to Google Chrome browser? Example: abradley@freemanacademy.org *

○ Yes

○ No

○ I'm not sure.

Do you use your Google Drive to save files? *

○ Yes

○ No

○ I'm not sure.

Where do you normally save files? *

○ My Computer

○ Common Drive

○ Google Drive

○ I'm not sure.

Have you used the Google Drive Assignments button in Schoology? *

◯ Yes

◯ No, and I don't know what that is.

◯ No, but I understand what that is.

◯ I'm not sure.

How comfortable do you feel using Google Workspace (Google Drive and Google apps like Docs, Sheets, and Slides)? *

1 2 3 4 5 6 7 8 9 10

I do not know what this is. ◯◯◯◯◯◯◯◯◯◯ I feel confident in all of these areas.

At this point, what degree do you or have you incorporated Google Workspace into your courses? *

◯ 0- I have not used it all.

◯ 1- I have used it for file storing.

◯ 2- My students use it for file storing (specifically for my course).

◯ 3- I have created a file using a Google App (Docs, Slides, Sheets, Forms, etc.)/My students have created a file using a Google App for my course(s).

◯ 4- I have created an assignment in Schoology using the Google Drive Assignments button.

◯ Other: _____

Do you have any specific feedback to inform future sessions?

Your answer

Submit   Page 1 of 1   Clear form