Training and Teacher Confidence with ICTs

BGP2 Task 1

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Chapter 1

Topic

The research topic is in regard to educators who are lacking the confidence to use Microsoft Apps to create engaging assignments for virtual learning due to a lack of training.

Problem Statement

Public K-12 teachers in the researcher's social circle lack the confidence and training to effectively use an information and communications technology (ITC), such as Microsoft's Educational Apps, within their virtual classroom. This is a significant problem because it impacts their ability to design assignments and activities that will increase their students' engagement.

Purpose of the Study

The purpose of this research is to determine if providing training to educators on how to use Microsoft's Educational Apps (Word, Excel, Forms, PowerPoint, Sway and OneNote) will affect their confidence with creating assignments in a virtual setting. Participants will gain an understanding of Microsoft Educational Apps with the intent to improve teacher confidence. Schools have provided teachers with access to these resources will providing limited or no training on how to effectively use them for their classroom.

Research Question

How will educating teachers on Microsoft's Educational Apps affect their confidence in using them to create assignments for their virtual classroom? This question will be approached through action research by administering a pre/post survey identify initial confidence levels prior to providing provide training on Microsoft's Educational Apps and after providing training.

Limitations of the Study

   A limitation of this study will be the number and type of participants. All participants will be voluntarily completing this training outside of their contracted teacher hours due to the timing. This will lead to a smaller sample size and convenience sampling.

Chapter 2

Literature Review

The use of computers and online resources in public k-12 has been increasing consistently but the COVID 19 Pandemic has accelerated the rate at which school districts embraced one to one device for their students. As a student I was exposed to technology in elementary school and have continued my interest as a teacher. Unfortunately, not all new teachers are as tech savvy, teachers have a lack of training, confidence, and time. That coupled with the need for individualized training have led to teachers struggling to make their teaching engaging in this virtual setting.

When school districts went fully virtual in the Spring of 2020 the focus was on student wellness. Returning in the Fall of 2020, the focus once again returned to academics. Most school districts implemented a learning management system (LMS) and spent their time training their teachers how to manage their chosen site. In my school district most of our training was on how to use Canvas but we received no training on how to use Microsoft Educational Apps, one of our ICTs. The Apps can provide teachers with a variety of ways to create engaging higher-level assignments for students. Research shows that teachers currently are not prepared to use these resources because of the following factors: technology levels of preservice teachers, lack of time, lack of training, a need for individualized training and a lack of confidence.

Technology Levels of Preservice Teachers

One of the most common assumptions of new teachers is that they are more tech savvy because they have been exposed to technology their entire life. As these digital natives entire the classroom, schools and mentor teachers expect them to have a greater understanding of how to use technology. While this may be true for a small portion research shows that most preservice

teachers are not prepared for the type of technology use that is expected of them as a teacher. They know how to use some of it as the student but lack the training and practice to create as the teacher.

Swapna Kumar and Katya Vigil surveyed 21 undergrad preservice teachers about their technology use. Their survey findings confirmed previous studies that although these students have experience using social media and educational technologies such as blogs, podcasts, videos, and wikis, they lack the practice of creating these online resources. They identified that part of the issue is that the professors themselves, lack the training on how to create these resources, so therefore are reluctant or unable to design learning opportunities for preservice teachers to practice creating digital resources (Kumar 2011).

Hicham Zyad wanted to see the impact of Morocco's pre-service training program reform in 2000 when they introduced an ITC requirement into all of their middle and secondary teacher education programs. For his exploratory study he administered a questionaries to 56 teachers. He found that although participants were satisfied with their programs coverage of basic computer skills the overwhelming majority, 95.65% of males and 87.87% of females, felt their preservice program did not integrate their content pedagogy with the technology. They were assessed on computer skills but were never asked to demonstrate how that technology use could be used for instructional purposes (Zyad 2016).

Stéphanie Simard and Thierry Karsenti wanted to see how preservice programs prepared preservice teachers to use ICT to help their future students develop information literacy skills. Through their sequential mixed methods study they interviewed 413 French Canadian preservice teachers from four universities in Québec. Their findings showed that the preservice teachers felt they did not have enough training on the use of technology. When asked what their teacher

preparation program could do to better prepare them 41.7% suggested that there should be more courses on ICT. One participant was even quoted saying, "It should go beyond just using PowerPoint (Simard 2016)." This study showed that preservice teachers are aware that their surface level understanding of technology is not enough to implement it in their future classroom in a meaningful way.

Lack of Training

Before successfully implementing any new initiative or strategy in a classroom, teachers need training on the topic. Technology is a quickly changing field and varies from school district to district. When new programs, learning management systems, and technology devices are introduced to schools there is limited training on how to use them prior to implementation in individual classrooms.

When Dr. Serhat Kurt and Dr. Muhammaed Ciftci completed a mixed methods study attempting to identify the perceived barriers to teachers using technology in elementary schools in Turkey, they found lack of training to be one of the six major barriers. From their study, 24 out of the 26 teachers acknowledged their own lack of training as a barrier (Kurt 2012).

Trent Grundmeyer and Randal Peters set out to see how effective high school 1 to 1 laptop initiatives were for preparing students to use them in college. As they completed their qualitative study of interviewing college students a common theme was identified. The researchers found that there was an "implementation dip" for most of the programs due to increased availability of technology without increased professional development for teachers on how to use it. The participants shared that they dealt with a lot of trial and error in the first year of implementation which impacted their ability to be successful academically. As the program continued the students commented on how the teachers were able to use the laptops more

effectively which in term help them be successful. The researches also acknowledged that when training is provided it needs to be provided continuously so that new teachers can benefit from the training every year (Grundmeyer 2016).

Katherine Fulgence conducted a qualitative study to try to discover how Tanzania's teacher educators at the university level developed their own digital skills so they can help their students relate to the contemporary world. What she found was that of the 90 participants 60% of them identified that they developed their digital skills by completed individual trainings and that only 31% felt they received training through their job. The researcher concluded that the government needs to invest in instructional designers, content developers and educational technologists who can provide educators the quality training they need to develop their digital fluency as technology continues to change (Fulgence 2020).

Lack of Time

Time is a finite resource, and this is evident in the current expectations of teachers. As a society we have placed increasing roles and responsibilities on teachers. With the movement to fully virtual, teachers are now expected to also be masters of technology in addition to their previous tasks. Even prior to the pandemic, the research shows that teachers had a lack of time to learn the tools necessary to effectively use ICTs.

Atef Abuhmaid completed a mixed methods study attempting to analysis if teachers in Jordan were prepared to use ICTs to support their students' learning and if they were not what were the factors preventing them. Over a four-year period, he administered his questionaries to 115 teachers and 15 Principals. His participants all taught at schools that participated in ICT trainings provided by the Ministry of Education in Jordan and 113 of the participants had attended at least one training. Despite receiving training, only 42.6% felt that they had enough

time to develop and practice the strategies that they learned in their training session (Abuhmaid 2011).

Marthese Spiteri and Shu-Nu Chang Rundgren conducted a qualitative study to see how elementary school teachers in Malta use technology in their classroom and how training could impact this. After interviewing 26 elementary school teachers, a common theme of lack of time to finding quality ITCs appeared. The participants had to use a significant amount of time searching for online resources such as videos, PowerPoints, and interactive games. They knew they needed more training and stated they were willing to invest their time in professional development. The study reflects that schools need to provide the time and space for these trainings to ensure time is not a barrier preventing all teachers from receiving professional development on necessary technologies (Spiteri 2017).

During the 2013-2014 school year the Bluffton University faculty sought to engage their students through increased technology use in their course. One of their case studies focused on a Computers and Technology class and how the professor provided choice to students to increase engagement. The teacher spent considerable time creating multiple units and assignments so students could pick two assignments and a technology integration unit of their interest. The teacher saw increased engagement in her students but what the study notes that the faculty also voted to have a sabbatical for the majority of their normal faculty governance work for the school year. This study demonstrated that in order to create and implement engaging digital content that teachers need unencumbered time (Nisly 2015).

Need for Individualized Training

Public education often discusses the importance of making learning individualized to make it more meaningful to the learner. This does not only apply to public school students but

also to educators when they are receiving professional development. In order to more effectively, and quickly, implement new technology they need trainings to relate to their subject matter.

In 1997 Mexico implemented ICTs into their public education system and from 2013-2015 gave out various computers and tablets to 5th grade students. Without a federal initiative, changing focus each year, and limited training for educators there was limited success in the implementation of ICTS. At the beginning of the 2016 school year, the Secretary of Public Education arranged for an independent body, the General Coordination of @prene.mx, to design and administer a training and support program that would help schools use the ICT as a learning tool. Due to the wide nature of the program, 13 states, the researchers were able gain insight into a wider pool of participants. Their findings showed that participants that experienced the greatest growth in incorporating ICT where those who were designing materials for their own content matter in their trainings (Franzoni 2020).

Dr. Zeynep Ayvaz-Tuncel and Dr. Fatma Çobanoğlu created a qualitative study that examined the opinions and ideas of new educators on in-service training they participated in. The 494 first year teachers, student teachers and counselors were all new to their schools in Denizli for the 2015-2016 school year. From their questionaries, the researchers found that most of the participants found the training unenlightening because it was a repeat of what they learned college education courses. Participants also found that the training was a contradiction because the presenters would lecture on how to embrace a constructivist type of teaching without providing the learners with an opportunity to see it put into practice (Ayvaz-Tuncel 2018).

The University of Lisbon saw the need to encourage their professors to use online learning resources and various technologies. To meet this need they developed an e-learning Lab (e-Lab), whose role would be to create and offer courses to help the university's teachers to

design their own e-learning courses for students through improving their ICT skills. Researchers surveyed the 103 professors who attended workshops from 2014 and 2017. Participants were able to select the training that best fit their needs between Moodle (Learning management system), E-learning pedagogy, multimedia creation, e-learning support tools. By providing participants with the ability to attend the training they felt they needed, the e-Lab experienced greater success. Researchers found that participants were highly satisfied with their training because the workshops were designed to address both technical ITC skills and how to integrate them into participants content area (Bastista 2017). This study showed that when training is individualized for the specific needs of the learners, that the learners will be more satisfied and find more value from the training.

Lack of Confidence

Teachers, just like their students, need exposure and practice with a topic before they can confidently use and present it to their students. If schools and society expect teachers to embrace new technology into their instruction, teachers need to have the confidence that they are knowledgeable enough to use the technology devices and ICTs.

In Northern Cyprus, Begum Cubukcuoglu conducted a case study to identify factors that encouraged teachers to use ICT resources while teaching their content. He interviewed seven teachers over a period of two semesters. One of the main teacher factors he identified was teacher confidence. Suzan, one of the participants, was interviewed saying, "The more a person is involved in technology, the more s/he will tend to use it even more and better. A person who does not know how to use technology (computers) will avoid using it... so, having technology (computer) skills is an enabler factor in integrating ICT into teaching. (Cubukcuoglu 2013)."

Charles Buabeng-Andoh, in a non-research article, identified the key factors that influenced whether teachers would use ICTs in their classroom. He discusses the importance of teacher's computer self-efficacy. Without their own confidence in the ability to use the ICTs, teachers will not be able to successfully use ICTs in their classroom (Buabeng-Andoh 2012).

Kleopatra Nikolopoulou and Vasilis Gialamas, were also interested in identifying teacher's perceived barriers to computer usage in the classroom. For their quantitative study they interviewed 119 high school teachers from various schools in Athens, Greece. Through their findings they discovered that lack of confidence with technology was higher in female teachers and teachers who did not receive the first level of ICT training. Conversely, teachers with increased exposure to computers and more time with computers expressed greater overall confidence with technology (Nikolopoulou 2016).

Conclusion

The research shows that these factors are preventing the successfully implementation of various ICTs across multiple levels. There has been much research completed about identifying the factors and barriers to the use but there is little research on how to begin addressing the barriers, especially at the K-12 grades. As a current middle school teacher, I was most interested to see if there would be a positive correlation between teacher confidence and training in ICTs. There was no research on training teachers to use Microsoft's Educational Apps specifically despite its frequent use by school districts.

Chapter 3

Research Methodology

Proposed Research Design

This mixed methods action research study will consist of adult learners completing quantitative pre/post study surveys as well as lesson reflections in order for the researcher to assess their confidence level with Microsoft's Educational Apps.

A pre study survey will be designed and analyzed to gain an understanding of the current technology and confidence levels of the participants. A post survey will be designed and analyzed to compare participants confidence level from before the training to after the training. At the end of each lesson, participants will respond to open ended qualitative reflection questions.

Surveys will be created using Microsoft Forms and linked in the studies OneNote. Once the surveys are received, the data will be organized and coded for anonymity.

Participants

Participants will be chosen from the researcher's social circle using convenience sampling. The goal is to have 5-10 adult learners that are current K-12 public school teachers whose school district using Microsoft for Education. The learners will be completing the trainings asynchronously from their own computer.

Methods of Data Collection

To address the research questions in this study, participants will complete surveys and end of lesson reflections. They will answer seven Likert questions about their confidence and the effectiveness of the training. Three open ended questions will seek to understand their feelings and opinions about the technology, their confidence and the training. As participants complete

each lesson, they will complete a reflection of how they can use the specific Microsoft Education App in their classroom.

Procedures

Once participants have agreed to voluntarily participate in this study, the researcher will email them the Informed Consent. Within the Informed Consent participants will be made aware of the types of data that will be collected and how the data will be used. After the Informed Consent is returned, the researcher will send a welcome email with information on how to join the OneNote Notebook were all training information will be kept. In the welcome email, the researcher will include a link to the pre study survey to assess the current level of participants confidence and technology use. As with every survey in this study, it will be anonymous, and participants will be informed of this prior to completing the survey. The participants will be informed that they may select to withdraw from participating in the study at any time by notifying the researcher without penalties.

The training has been broken up into nine self-paced lessons: introduction, Microsoft forms, Microsoft word, Microsoft Sway, Microsoft Excel for organization, Microsoft Excel for student work, Microsoft PowerPoint, setting up a Microsoft OneNote Class Notebook, creating pages within Microsoft OneNote Class Notebook, and wrap up. Each App lesson should take participants approximately an hour to complete with the introduction and wrap up taking approximately thirty minutes.

For each lesson, participants will first use the App as a student by completing a sample activity. Participants will watch videos and read text that show them how to create their own version of an activity using the App. To demonstrate their understanding of the training they will

then create something they can use in their real classroom using the App. As a wrap up for each lesson they will complete a Microsoft form reflection on their training. Throughout the training the instructor will be available by email and can schedule Microsoft Teams meetings to provide additional 1-1 support. All of the videos, activities, and sample activities will be housed within the Microsoft One Note Classroom for participants to access at their own rate and for other instructors to use as well.

At the end of the study, learners will complete the post study survey. They will be sent a thank you email which includes information about how they can obtain results of the study and that the researcher may contact them after the data has been analyzed for additional feedback. The surveys and the data will be organized in a chart for data analysis.

Participants will work through the self-paced training lessons with support from the researcher through email and videoconferencing. After an introduction lesson on basic Microsoft concepts and tools, learners will receive training on each of Microsoft's Educational Apps: Word, PowerPoint, Forms, Excel, Sway and OneNote. For each of the lessons, learners will be provided with example(s) of how the app can be used in a classroom, training on how to create their own and then an assignment to design an assignment or activity using that app for their own classroom. At the end of each lesson, they will complete a reflection of how they plan on using the app in their classroom.

Data Analysis

The data collected will be coded to support maintain participant anonymity. The data will then be analyzed to identify and explore themes of participants confidence with the specific ICTs. The researcher will use this information to make conclusions about the impact of training has on teachers' confidence with technology. From the pre/post surveys, researchers will be able

to see if there was an impact on teachers' confidence by looking at the Likert ratings. From the same surveys, researchers will be able to see if participants found content specific training to be more effective, less effective or no change in effectiveness as opposed to previous trainings. This quantitively data will be analyzed through descriptive statistics to look for trends in participants responses comparing pre/post survey. By comparing the pre/post survey responses, the researcher can determine if there has been group growth.

Triangulation will occur by using lesson reflection and the open-ended survey questions in order to utilize qualitative data to provide anecdotally evidence that supports the quantitative data collected from the pre/post study survey. Participants will provide feedback at the end of survey, which provides additional validity of the findings.

References

Abuhmaid, A. (2011). ICT Training Courses for Teacher Professional Development in Jordan.
Turkish Online Journal of Educational Technology - TOJET, 10(4), 195–210.
https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ946628&authtype
=sso&custid=ns017578&site=eds-live&scope=site

Ayvaz-Tuncel, Z., & Çobanoğlu, F. (2018). In-service Teacher Training: Problems of the
Teachers as Learners. International Journal of Instruction, 11(4), 159–174.
https://doi.org/10.12973/iji.2018.11411a

Batista, S., Pedro, N., Agonacs, N., Fonte, M., Oliveira, N., & Matos, J. F. (2017). Evaluation of
Teacher Training Satisfaction: A Critical Factor for Technology Integration in Higher
Education. Proceedings of the European Conference on E-Learning, 580–584.
https://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=126280719&authtype
=sso&custid=ns017578&site=eds-live&scope=site

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of
information and communication technology into teaching: A review of the literature.
International Journal of Education & Development Using Information & Communication
Technology, 8(1), 136–155.
https://search.ebscohost.com/login.aspx?direct=true&db=ofm&AN=88933233&site=eds-
live&scope=site

Cubukcuoglu, B. (2013). Factors enabling the use of technology in subject teaching.
International Journal of Education & Development Using Information & Communication
Technology, 9(3), 50–60.

https://search.ebscohost.com/login.aspx?direct=true&db=eft&AN=95745572&authtype=sso&custid=ns017578&site=eds-live&scope=site

Franzoni Velázquez, A. L., Cardenas Peralta, M. C., & Mandujano Canto, J. Á. (2020). Lessons from the Training and Support of Teachers in the Development of Digital Skills: A case study of @prende 2.0. Digital Education Review, 37, 154–171. https://doi.org/10.1344/der.2020.37.154-171

Fulgence, K. (2020). Developing digital fluency among teacher educators: Evidence from Tanzanian Schools of Education. International Journal of Education & Development Using Information & Communication Technology, 16(2), 158–175. https://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=146115624&authtype=sso&custid=ns017578&site=eds-live&scope=site

Grundmeyer, T., & Peters, R. (2016). Learning from the Learners: Preparing Future Teachers to Leverage the Benefits of Laptop Computers. Computers in the Schools, 33(4), 253.

Kumar, S., & Vigil, K. (2011). The Net Generation as Preservice Teachers: Transferring Familiarity with New Technologies to Educational Environments. Journal of Digital Learning in Teacher Education, 27(4), 144–153. https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ936543&authtype=sso&custid=ns017578&site=eds-live&scope=site

Kurt, S., & Ciftci, M. (2012). Barriers to Teachers' Use of Technology. International Journal of Instructional Media, 39(3), 225–238. https://search.ebscohost.com/login.aspx?direct=true&db=edb&AN=78855034&authtype=sso&custid=ns017578&site=eds-live&scope=site

Nikolopoulou, K., & Gialamas, V. (2016). Barriers to ICT use in high schools: Greek teachers'

    perceptions. Journal of Computers in Education, 3(1), 59–75.

    https://www.researchgate.net/publication/286394346_Barriers_to_ICT_use_in_high_sch

    ools_Greek_teachers'_perceptions

Nisly, L. L., Cecire, S., Friesen, M., & Sensenig, A. (2015). Creating Engaging Assignments.

    National Teaching & Learning Forum, 24(3), 9–11.

    https://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=27&sid=57598385-9c26-4a04-

    afb9-9a06b42265a1%40pdc-v-sessmgr06

Simard, S., & Karsenti, T. (2016). A Quantitative and Qualitative Inquiry into Future Teachers'

    Use of Information and Communications Technology to Develop Students' Information

    Literacy Skills. Canadian Journal of Learning and Technology, 42(5).

    https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1130131&authtyp

    e=sso&custid=ns017578&site=eds-live&scope=site

Spiteri, M., & Chang Rundgren, S.-N. (2017). Maltese primary teachers' digital competence:

    implications for continuing professional development. European Journal of Teacher

    Education, 40(4), 521–534. https://doi.org/10.1080/02619768.2017.1342242

Zyad, H. (2016). Pre-service training and ICT implementation in the classroom: ELT teachers'

    perceptions. International Journal of Education & Development Using Information &

    Communication Technology, 12(3), 4–18.

    https://search.ebscohost.com/login.aspx?direct=true&db=eft&AN=120887641&site=eds-

    live&scope=site