Northwestern College, Iowa

NWCommons

Spring 2021

Pella Middle School Technology Integration School Improvement Plan

Morgan Ernst

Pella Middle School Technology Integration School Improvement Plan

Morgan Ernst

Northwestern College

A School Improvement Plan Presented

in Partial Fulfillment of the Requirements

For the Degree of Master of Education

Abstract

The demands and use of technology are constantly changing in the school setting. Teachers in the Pella Community School District felt as though they did not have adequate technology skills to deliver effective instruction virtually and requested further training. This school improvement plan contains a literature review to determine effective components of professional development. The plan also outlines a semester of professional development sessions for technology integration including tools and deliverables to demonstrate evidence of teacher learning.

Keywords: technology integration, professional development, school improvement

Contents

Pella Middle School Technology Integration School Improvement Plan

Due to COVID-19 and scrambled attempts to teach through distance learning, many school districts have been forced to acknowledge a need for intentional training on technology integration. This need has always been present but was only recently deemed a necessity. A 2017-2018 study by the National Center for Education Statistics (NCES) found only 21% of public schools across the United States offered at least one course entirely online. Schools offering online courses were typically found at the high school level. According to a study by the US Department of Education (2019), only 2.7% of primary schools and 12.7% of middle schools provided some form of an online course. This study indicates very few teachers have experience teaching courses online and incorporating technology. With the rise in hybrid models and virtual learning options for students, properly equipping teachers has become crucial in order to provide high quality learning opportunities for students.

Students of the 21st century need to be able to problem solve and think critically while collaborating with colleagues and navigating technology. A literature review by DiBenedetto & Meyers (2016) studied nine seminal articles outlining employability skills needed in 21st century students. Of these nine articles, six directly mentioned technology skills as a key employability factor. The rapidly changing technology industry and demands of society have created an increased need for a focus on technology integration and implementation of technology standards within the public school systems.

Teachers were unprepared and unequipped with the resources and skills needed to provide high quality instruction to virtual learners. This need was made apparent in 2020 when COVID-19 closed schools across the United States. The purpose of this school improvement plan is to deliver technology centered professional development opportunities to increase teacher

efficacy and use of technology. Teachers in the Pella Community School District widely vary in

technology proficiency. It is important all teachers across the district are equipped to be

designers and facilitators of authentic learning opportunities both in the classroom and through

distance learning (ISTE, 2017). While great efforts were made during the spring shutdown of

2020 due to COVID-19, inconsistencies in technology proficiency, integration, and efficacy

appeared throughout the district. Furthermore, teachers expressed a need for further technology

training and resources during staff meetings taking place throughout the first semester of the

2020-2021 school year.

The research and professional development provided throughout this school improvement

plan will directly impact teachers of the Pella Community School District. An improvement to

technology integration throughout the district will then directly impact students who are learning

virtually as well as students who are learning in-person. At the end of this school improvement

plan, professional development will be delivered to all teachers grades K-12 focused on

technology integration. The professional development model will be constructed based on the

research findings and evaluated for effectiveness.

Technology training for simultaneous virtual and in-person instruction needs to be

customized to meet the needs of each building staff. The goal of this research is to answer the

question "What is the best way to design and deliver professional development focused on

technology integration?" By conducting this research and designing a professional development

model for technology integration, teachers will increase their self-efficacy and become more

proficient using technology. Professional development for technology is best delivered by using

a peer-coaching model which provides sufficient time to collaborate with colleagues, explore

new tools, and directly apply new learning to the classroom. Professional development must also lend itself to opportunities for reflection and feedback.

As part of this school improvement plan, a literature review was conducted in order to determine the best models to deliver professional development centered around technology. The articles used for the literature review were published between the years of 2010 and 2021. They were collected from databases using a variety of search terms including professional, development, model, technology, integration, self-efficacy, feedback, collaboration, and peer coaching. The literature review will describe the importance of self-efficacy and its impact on technology integration, the characteristics of effective professional development, the benefits of peer modeling and collaboration within professional development, and the purpose of feedback within these models. This literature review will be used to design a professional development plan in order to fit the needs of the teachers in the Pella Community School District.

Review of Literature

Self-Efficacy and Technology

Albert Bandura (1997) describes efficacy as one's belief in their abilities to control their actions to obtain the desired result. The self-efficacy of a teacher has been shown to make a powerful impact on student learning. Meta-analysis research begun by John Hattie supports Bandura's assertions. Donohoo, Hattie, and Eells (2018) report a collective teacher efficacy effect size of d=1.57 and a self-efficacy effect size of d=0.92. These compare to feedback (d=0.73) and classroom management (d=0.52), which are also considered impactful teaching practices. Collective teacher efficacy is a collective belief of teachers in their ability to positively impact students. This research by Donohoo, Hattie, and Eells has identified collective teacher efficacy as the most significant impactor of student achievement. Self-efficacy is the

individual belief of a teacher to positively impact students. Both forms of efficacy provide a foundation for motivation, drive, and accomplishment. When teachers are given opportunities to explore technology, practice, and collaborate with peers during professional development, they are able to increase their self-efficacy when using technology (DeSantis, 2012; Krause, 2017).

A study by Siyam (2019) concluded teacher self-efficacy was the number one factor in determining the level of technology integration within the classroom. This study surveyed 24 special education teachers to determine factors hindering their technology use. Self-efficacy was determined to be a better predictor of technology integration than time, access, or job relevance. This means a teacher's belief in his or her ability to use technology to help students be successful outweighs other barriers. Siyam found self-efficacy attributed to 43.8% of the perceived ease of use score. This discovery means teachers who were confident in their abilities to use technology found new tools easier to use. Teachers referenced prior trainings, background knowledge, and understanding of technology frameworks as contributing factors to their self-efficacy.

A framework studying the connections between technological, pedagogical, and content knowledge is known as the TPACK framework. A study by Joo, Park, and Lim (2018) of 296 preservice teachers found teachers who studied the TPACK model increased their perceived ease of use ($\beta = .19$, $t = 3.01$, $p < .05$) and self-efficacy ($\beta = .73$, $t = 10.75$, $p < .05$) around technology integration. These studies show an increase in both self-efficacy and TPACK knowledge lead to a greater rate of technology integration. Krause (2017) followed pre-service teachers who were provided with "non-threatening" opportunities to explore new technology, practice these skills, and ask questions of their peers to clarify their understanding. This allowed the participants to build confidence using technology which increased their self-efficacy from a mean score of 3.9 to 4.1 out of 5. Given the intent of this project is for teachers to integrate

technology into multiple settings, teachers must be provided with ways to improve their self-efficacy by allowing them to engage in learning opportunities while reducing the fear of failure.

History of Technology Use and Professional Development

Creating professional development focused on technology integration can be challenging because each individual has different background knowledge and has unique needs for his or her specific classroom. Pan and Franklin (2011) collected data from 559 teachers indicating low levels of technology integration in the late 2000s and early 2010s when WEB 2.0 tools were beginning to roll out. This survey indicated a mean score of 1.47 on a five-point Likert scale where one indicated "never" and five indicated "daily" use of WEB 2.0 tools. This research went on to determine teacher efficacy ($r = .302$, $p = .000$ ($p < .05$) , professional development $r = .142$, $p = .020$ ($p < .05$) , and administrator support ($r = .224$, $p = .003$ ($p < .05$) were the biggest predictors of technology integration. This research indicated a significant need for technology training but did not suggest beneficial training models. After this need for technology training was identified in the early 2010s, studies were conducted to determine how technology could be used effectively within a classroom and taught to teachers. Throughout the process, both effective and ineffective characteristics were identified.

According to research conducted by Unger and Tracey (2013) teachers reported relevance of the training as one of the most beneficial components of technology training. They also determined training specific to the content area to be more helpful than generalized training. Unger and Tracey's research determined teachers understand they gain more knowledge through active participation than through watching a presentation or listening to a lecture. Support for a transition to specific and interactive professional development model has since been noted by

numerous other studies (Siko & Hess, 2014; Alsaleh, Alabdulhadi, & Alrwaished, 2017; Avci, O'Dwyer & Lawson, 2019; Williams, 2017).

Research by DeSantis (2012) concluded successful professional development occurs when "leaders plan professional development that scaffolds the instruction of new skills, encourages collaboration and reflection among teachers, and encourages teachers through positive supervision" (p. 55). Effective professional development models are still being studied and modified. Literature on generalized technology integration is fairly limited as most studies have been conducted for individual subject areas or specific technology tools instead of for technology integration as a whole. Bozkurt (2020) used data mining and analysis techniques to identify trends in educational technology over the past 30 years. He found published research in EdTech is usually tied to a singular subject area with 50% of those articles pertaining to Social Studies. In addition, Bozkurt found EdTech related publications have increased from only 10 related articles in 1993 to 65 published in 2019. This increase in EdTech indicates a more pressing need for professional development on technology integration than was in the 1990s and early 2000s. These findings support the teacher feedback collected by Unger and Tracey (2013) stating training should be specific.

Since most early research was conducted using specific content areas, it is difficult to determine the best model of professional development for technology integration to use at a building-wide and district-wide level. Avalos (2011) conducted a study of professional development models from 2000-2010 which included 111 articles. His goal was to determine how to increase content knowledge, improve self-efficacy, and implement reflective practices of professional development. Avalos determined professional development models meeting inconsistently, isolating teacher learning, or including poor reflection tend to be ineffective.

Avalos concluded the main purpose of professional development should be to provide training and application opportunities for educators that can directly impact their students. The next portion of the literature review aims to identify the key characteristics of effective professional development models in relation to technology integration.

Characteristics of Effective Models

Bozkuş and Bayrak (2019) state professional development must be timely and "oriented towards the practical problems [teachers] face" (p. 347). In individual interviews, 8 of the 11 teachers mentioned training should be directly applicable to their practice. Bozkus & Bayrak go on to state "professional development of teachers should be provided according to their needs" (p. 348). In order to achieve complete teacher buy-in, teachers need to be self-motivated to participate. Svendsen (2017) also completed a 3-year longitudinal qualitative study in which he concluded teachers are more likely to cooperate when the focus of the professional development is on their immediate needs and concerns. Both of these studies found teachers are more intentional about implementing their learning when it addresses an immediate concern in their classroom.

On-going professional development opportunities are key to developing a successful program. The Iowa Department of Education (n.d.) suggests professional development opportunities should be distributed throughout the year and contain specific goals for teams to achieve during the designated meeting times. Liu & Phelps (2020) conducted a study on the decay rate of knowledge learned through professional development. They found the average decay rate for knowledge that was not revisited or required immediate implementation was 37 days. In addition, it was discovered knowledge learned during the school year was retained longer than professional development opportunities offered during the summer. In order to

combat this decaying knowledge, professional development opportunities should be offered over an extended period of time. This allows teachers to have more frequent exposure to the tools and content and leads to a higher rate of integration within the classroom.

Technology professional development must be centered on a specific framework to provide a clear direction for educators. One of the most studied technology frameworks is the TPACK model. TPACK stands for technological, pedagogical and content knowledge. The key to this model is finding a balance between all three areas by having a strong understanding of content knowledge, pedagogical understanding, and technology resources best fit the objective of the lessons. Liu and Kleinsasser (2015) conducted a study of building TPACK knowledge among vocational high school teachers which ended in an average gain of 1.01 points on a five-point scale. Participants in this study reported multiple benefits when they were provided with specific time to explore new technologies and develop technology integrated projects with the intent of using them in the classroom. Joo, Park, and Lim (2018) claim a connection between knowledge of TPACK and self-efficacy ($\beta = .73$, $t = 10.75$, $p < .05$). As teachers study and implement the TPACK framework, their perceived ease of use also increases ($\beta = .19$, $t = 3.01$, $p < .05$). Using a technology framework to design professional development provides a common language as well as a shared vision. This can help teachers align their technology integration to the overall goal of student learning.

The International Society for Technology in Education (ISTE) standards provide further guidance and structure for teachers as they develop their technological knowledge. These standards outline seven practices every educator must master when working with technology including the learner, leader, citizen, collaborator, designer, facilitator, and analyst (ISTE, 2017). The ISTE standards emphasize technology in the 21st century. As teachers become more

established in these standards, they will be able to model them for students and integrate

technology as a tool for everyday use. These standards should be deeply embedded and found at

the core of all technology professional development.

In addition to the ISTE standards and technology framework models, the Iowa

Professional Development Model (IPDM) has developed rubrics to help schools determine the

effectiveness of professional development. These rubrics contain 24 dimensions for building-

wide professional development developed on a four-point scale. These 24 dimensions are

categorized into five components including: collecting and analyzing student data, goal setting

for professional development, selecting content, design, ongoing cycle, and summative

evaluation. The design component makes mention of including theory, demonstration, and

practice while also providing adequate time for collaborative opportunities. The Iowa

Department of Education also suggests using both formative and summative data to ensure

learning and implementation of the content (Iowa Department of Education, n.d.).

Benefits of Collaboration and Peer Modeling

The aforementioned, the Iowa Department of Education rubrics for developing

district/building profiles place a significant focus on collaboration and make it a key component

for designing effective professional development. Collaborative models allow teachers to work

together, ask questions, and reflect (Siko & Hess, 2014; Liu, Tsai, & Huang, 2015; Svendsen,

2017). Teachers feel more confident when they are able to collaborate with peers. A 2017 study

identified collaboration (0.260***, p<.001) as one of the key factors influencing teacher self-

efficacy which directly impacts teacher effectiveness (Sehgal, Nambudiri, & Mishra, 2017). In a

study by Alsaleh, Alabdulhadi, and Alrwaished (2017) all 12 participants reported collaboration

played a significant role in their professional development. 10 out of the 12 also reported

increased excitement for the teaching profession as a result of their collaborative professional development sessions. Collaboration allows for teacher teams to problem solve, create new resources, and analyze data in order to improve student outcomes. Several other studies support various models of collaboration both in group settings and through a peer-coaching model (Liu et. Al, 2015; Svendsen, 2017; DiBenedetto & Meyers, 2016).

Several studies have been conducted on the effects of peer-coaching models for professional development. Shared leadership is an important component when developing a professional development model. Shared leadership allows for all voices to be heard and can help create cohesion across a building or district. Teachers who participate in peer-coaching report feeling more confident in their teaching abilities. They are also able to self-reflect with colleagues with whom they have built trust and relationships (Asaleh, Alabdulhadi, & Alrwaished, 2017; Compen & Schelfhout, 2020). In addition, teachers who are able to receive continuous support through ongoing professional development are more confident about their integration of technology and are more willing to try new tools (Liu & Kleinsasser, 2015). This leads to higher levels of technology integration. Avic, O'Dwyer, & Lawson (2018) state, "It is important that teachers remain connected with colleagues and other professionals in order to encourage feelings of motivation and to promote discussion around actual classroom application" (p. 174). Peer-led modeling and coaching provides opportunities for teachers to feel supported and encouraged. In-person professional development led by peers allows for a direct and individualized approach, since the coaches and trainers know what is going on in the classrooms and how to address the most significant needs of the building.

Liu, Tsai, and Huang (2015) report mentoring programs, similar to peer coaching models, provide mutual learning opportunities for all members involved. The three mentees who

participated in this study were able to move from simply matching technology with content knowledge to a more comprehensive implementation of the TPACK model. In addition, their mentor teachers reported learning about new technologies from the mentees. Since technology is constantly changing, it is nearly impossible for one person to serve as an expert. Mentoring and peer coaching may provide opportunities for all participants to share the strengths within a school district.

Feedback and Reflection

Feedback and reflection must be made a priority designing a professional development model. Ma, Xin, and Jia (2018) conducted research to explore the effects of specific and individualized feedback. The experimental group received individualized feedback, while the control group was provided feedback directed to the collective group. The experimental group experienced a statistically significant difference in three categories, including the frequency of questions asked, reflection, and the sharing of ideas. The frequency of questions received a mean score of 7.1 from the experimental group compared to a score of 4.2 from the control group. Reflection scored 1.9 compared to a 1.0. Finally, the sharing of ideas received a mean score of 10.1 compared to a mean of 4.1 from the control group. The researchers found their personalized learning approach to professional development had a positive influence on teachers due to an increased focus on providing feedback to the experimental group through peer coaching.

Peer coaching is not the only way to provide effective feedback. Feedback should vary based on the teacher or the integration technique being used. Nicolaidou, Karagiorgi, and Petridou (2016) suggest individualized feedback is the most effective feedback because it is specific to the participant. This includes feedback provided using technology. All feedback must be delivered carefully, and relationships between must be established on a foundation of trust. A

study focused on designing systems of online feedback found most participants "valued the facilitator's presence" during the learning opportunities. Marei et al (2021) determined providing truly effective online feedback has many barriers requiring further research since it is a relatively new way of teaching. This research consisted of 74 teachers participating in online PD sessions providing online feedback. The mean score for survey questions on feedback was 3.88 on a five-point scale with a standard deviation of 1.03. 29 participants provided positive written feedback, while 12 expressed negative responses. The negative responses mentioned generic feedback did not help improve their work. For this reason, traditional methods of personalized feedback and evaluation may be more impactful. More research needs to be conducted on effective ways to provide feedback using online platforms before going to an all-virtual delivery method.

When taking time to reflect, teachers are more likely to change their teaching approach (Svendsen, 2017). Adding intentional structure for teacher reflection after using technology is essential to developing high-quality professional development. Effective reflection opportunities can be provided individually through journals, surveys, or discussion boards. Yoon, Miller, and Richman (2020) conducted both face-to-face and online professional development for a total of 16 high school biology teachers with the goal of determining which delivery method was more effective. Both platforms received positive feedback. Teachers scored their online satisfaction with a mean score of 4.6, and their face-to-face satisfaction with a mean score of 4.73. The online professional development was designed specific to the content the teachers were responsible for in the classroom. Videos of real teachers using the content and strategies were embedded within the materials, and participating teachers were required to reflect upon their experiences. Opportunities for reflection during the face-to-face professional development were conducted both individually and in group settings. Brown et al (2020) collected data from 280

participants using mixed-method research. This research collected feedback and data centered around four categories of teaching with an emphasis on reflection. The four categories included professional body of knowledge, career-long learning, inclusive learning, and foundational knowledge about first nations. The mean data for the four standards were .238, .270, .184, and .272, respectively, all of which were considered to be statistically significant with a p-value of less than .0125. Upon further qualitative analysis of the results, Brown et al (2020) stated, "reflection and seeking feedback from others [are] a natural part of professional growth." While both of these studies suggest teacher reflection is an important component of learning, further research should be conducted to determine the most effective strategies for professional development and online learning. Components of both reflection and feedback should be on-going throughout the duration of the professional development regardless of the delivery platform.

Conclusion

Professional development centered around technology integration is a complex topic not researched in detail. Most of the current research pertains to the integration of a specific tool or integration within a particular subject area. Research has been conducted on professional development models and technology integration independently, but rarely together. There is a gap in the research for technology professional development across grade levels and subject areas. Further research needs to be conducted on the pairing of effective professional development models with technology integration. The findings from this literature review suggest technology professional development models should focus on improving teacher self-efficacy when utilizing technology. The model used should also be structured with a technology framework in mind to help teachers identify the purpose of their technology integration model

and should also provide teachers with adequate time to collaborate with peers, ask questions,

share their findings, explore new tools, and reflect on their learning. Aspects of a peer coaching

and modeling framework have several advantages including the timely and relevant cycles of

feedback and application. These findings will be used to develop professional development

sessions meeting the needs of all teachers in the Pella Community School District. The

professional development outline and evaluation tool will be built based on the findings of the

research and aim to fill the gap found in the research.

Need for Plan

District Information

The Pella Community School District (PCSD) is found just 40 miles southeast of

DesMoines in Pella, Iowa. The current population of Pella is just over 10,000 residents. Pella is

also home to Central College, which draws an additional 1,100 college students to the area. 95%

of the citizens are White. With strong ties to its Dutch heritage, 45% of Pella citizens have some

sort of Dutch ancestry. Pella is home to two major manufacturing companies, Pella Corporation

and Vermeer Corporation. These businesses are vital to the success of the community. A large

percentage of these employees commute to work because the cost of living in Pella is expensive

compared to the surrounding areas. The cost of living is high in Pella compared to surrounding

communities with a median home value of $169,100 (Demographics, 2020).

The Pella Community School District employs nearly 200 certified staff and serves over

2,000 students from the surrounding area. The district consists of two elementary buildings, an

intermediate building, a middle school, high school, and career academy. Pella is ranked as the

second safest city in Iowa with crime rate of 1.5%. Historically, Pella has been a district with

high academic achievement. According to the Iowa Department of Education (2019) the Pella

Community School District reported an 84. 85% proficiency in English Language Arts compared to the 69.81% statewide average. In addition, the school reported an 85.37% proficiency in Math compared to a 70.16% statewide average. Along with high levels of achievement, the 4-year graduation rate for the Pella Community School District at 96.89% compared to a statewide graduation rate of 91.41%. The diversity level of students in the district remains relatively low. 90.6% of the students are White, 1.6% are Black/African American, 3.4% are Asian, and 2.4% are Hispanic. 11.4% of students in the Pella Community School District have IEPs, while only 1.1% are English Language Learners. 20.3% of students qualify for free and reduced lunch services.

District Need

Despite the proficiency rates of the Pella Community School District being nearly 15% above the average state rates, learning and participation quickly came to a halt in the spring of 2020 when the COVID-19 pandemic hit. Teachers were given a week to prepare online learning opportunities for students to continue their learning during the 4th quarter. During this time, teachers worked together to design organizational systems, share online tools, develop activities, and create a central hub for students to access materials. Despite a week of preparation time, staff members and administration verbally expressed frustration about a lack of technological knowledge and resources to be able to teach effectively online during our staff meetings. This led to further discussion on the need for technology training. Prior to the end of the school year, the project was initiated through the school's change management system, and teachers were asked to apply for a position on the technology integration team. This team would identify needs, create rubrics, and deliver the professional development sessions throughout the 2020-2021 school year.

A feedback survey collected at the end of the 2019-2020 school year asked teachers to share celebrations and areas for improvement while teaching online. The survey was split into three categories which included skills, tools/apps, and training delivery. The specific comments can be viewed in the table found in Appendix A. The data collected from this survey was specific to the middle school and included a total of 40 responses. There were 20 celebrations including organizational strategies, technology tips, and online tools teachers found helpful. It should be noted the tools described as being successful were not used universally across the district. Teachers who used these tools discovered them on their own or heard about them through word of mouth. An additional 20 suggestions were also collected regarding areas needing improvement. 17 of the 20 improvement suggestions had to do with a need for skill training or online tools. The remaining three suggestions were for future training delivery models. The results of this survey showed a gap in the proficiency and level of comfort among teachers while using technology to facilitate online learning.

The middle school also kept informal records on participation and attendance in order to check in on students and make sure they were doing okay. These records show 125/183 (68.3%) of 7th grade students and 135/193 (69.9%) of 8th grade students did participate in some manner of the online learning opportunities. Many of these students would pick and choose which subjects and activities they participated in. Only 25/183 (13.7%) of 7th grade students and 40/193 (20.7%) of 8th grade students participated in 90% or more of all the online learning opportunities. At the end of the year, teachers followed up with students who selectively participated or chose not to participate. Five main reasons were discussed which included the non-mandatory requirement, difficulty accessing course materials, inability to obtain helpful feedback, poor content quality, and a lack of understanding the expectations. These participation rates in conjunction with the

feedback from teachers justified a need for further technology training through professional development. This technology training will help teachers learn about new technology tools, create systems of online organization, and learn how to give effective feedback in a virtual setting.

Goals for the Plan

The goal for this school improvement plan is to develop and deliver professional development focused on technology for the purpose of increasing teacher efficacy and integrating technology into the classroom and while teaching virtually. This is aligned to the International Society for Technology in Education (ISTE) standards. These standards provide a roadmap for teachers to help students become empowered learners. The ISTE standards require teachers to demonstrate the characteristics of learners, leaders, citizens, collaborators, designers, facilitators and analysts while integrating technology into their teaching and practice. The first part of this plan will include the creation and planning of the professional development model and resources. The second part of the plan will involve the implementation and feedback provided to teachers throughout the school year. The final part of the plan will gather feedback from teachers on the professional development experience in order to make future improvements. This plan addresses both the ISTE standards and district determined technology standards. It also fulfills the teacher requests for virtual and face-to-face tool training.

Success of this professional development training will be measured multiple ways. Within one semester of training, the average technology skills should increase by an average of 0.5 points on a 4-point scale. The competency rubrics used measure a teacher's ability to use technology applications to impact student learning. The professional development sessions will also be considered successful if there is an average increase of 0.5 points in teacher confidence

using technology. The technology leaders of each school building will develop rubrics of skills

all teachers at the particular grade level should be able to master. Skills within the rubrics will be

categorized according to the ISTE standards. Teachers will perform a self-assessment of skills

before and after professional development training. The skills training will be successful if all

teachers have reached the secure level for each skill on the rubric by the end of the semester.

Teachers will also fill out a pre and post survey of their beliefs on the integration of technology.

The individual success of this goal will be relative to the starting point for each individual. A

successful increase in efficacy will be indicated by an average confidence rating of 3.5 on a 4.0

scale by the conclusion of the technology training. Research from the literature review would

suggests increasing the skill set and efficacy of the Pella Community School District teachers

will increase the use of technology within the classroom. Further demonstration of success would

occur as teachers move beyond substitution with technology and use it to promote problem

solving, critical thinking, and provide outlets for students to express their creativity.

Plan Implementation

The Pella Schools ended the 2020 school year in a bit of a frenzy due to the COVID-19

pandemic. Fortunately, a technology committee had begun to determine district-wide technology

standards based on the ISTE recommendations. These standards were revisited and modified

based on virtual learning expectations, input, and feedback from teachers. A total of 40

comments were left by teachers at the middle school. These comments were used to specifically

tailor the design of the technology integration and professional development sessions for the

2020-2021 school year. The resulting 7-12 Competency Rubric can be found in Appendix B. The

ultimate goal of this rubric would be for all teachers to reach the "effective" level by the end of

the training. Reaching this base level of technology competency would provide the skill set to promote rich technology integration within classrooms.

Prior to the beginning of the school year, a team of nine middle and high school teachers developed collaborative tasks for professional development. These tasks were designed to be flexible and relevant to each classroom. The task for each week also addressed a standard covered in the competency rubrics (Bozkuş & Bayrak, 2019; Svendsen, 2019). The outline for each week included the competency being addressed, tools to be explored, an objective or task for teachers to complete in the form of a deliverable, and teaching guidance and feedback for the week. An overview for each session can be found in Appendix C. The overview for each session includes the competency focus, tools used, and deliverable. Each session began with a short presentation by the three teacher-leaders. These leaders presented the objective for the session, the task, and examples of tools to help reach the outcome.

During the sessions, teachers were encouraged to collaborate with teachers within their department or create cross-curricular activities with teachers from other departments (Siko & Hess, 2014; Liu, Tsai, & Huang, 2015; Alsaleh, Alabdulhadi, & Alrwaished, 2017). The tasks developed allowed for flexibility and creativity in order to make them beneficial for all involved. Teachers were asked to focus on specific skills within the competency rubrics and explore the assigned tools for each week. Outside of this guidance, teachers were given freedom to develop resources they believed beneficial for their own classroom. Teachers used this time to revise previous tasks, explore new tools, and develop projects and rubrics for upcoming units they planned to teach. The three teacher-facilitators served to address questions and provide guidance during the provided work time. Each session ended with an opportunity for teachers to reflect

within the deliverable and receive feedback from peers or coaches (Nicolaidou, Karagiorgi, &

Petridou, 2016; Brown et al., 2020).

Materials needed for these professional development sessions were created in-house

using resources that were already accessible to the school district. The planning of the training

required three paid summer days for the technology coaches to meet and develop the delivery

method and interactive activities. Resources for the 7-12 training were distributed using Google

Classroom. Participants had further access to materials and resources through the technology

integration website that was developed. In between sessions, the three teacher-facilitators were

available for questions and one-on-one coaching assistance. Many staff members took advantage

of these opportunities as they worked to implement their learning into their classrooms in the

weeks following each session.

One barrier that impacted the delivery of this professional development was the limited

equipment and new features being released for Google Meet. The Pella Community School

District had ordered Swivl and Owl cameras to be used in the classroom to provide better video

quality for virtual students. These cameras required initial setup and practice. In the initial plan,

teachers were provided with adequate time to practice before the school year started, but the

cameras were backordered and did not arrive until October. This required the technology team to

revise the training schedule and meet with virtual teachers independently to initiate the setup and

answer questions. Due to the delay in shipping many teachers established routines for the year

without the new cameras. Google Meet was in the middle of updating features which created

additional challenges with multiple platforms. Teachers were given the option to choose which

platform they wanted to use and separate training groups were created based on their selected

tool.

Another barrier existed when the teachers' beliefs about technology did not align with the goals of the training. Several teachers initially expressed their concern over screen time and technology as a distraction for students. These teachers were not as enthusiastic about developing projects using WEB 2.0 tools or creating spaces for students to collaborate virtually. Throughout the sessions, these teachers were able to see their peers have success with their creations and were more willing to give it a try. Through the use of feedback, reflection, and weekly check-ins the coaches were able to help the teachers become more confident in their own technology skills as they progressed through the competency rubrics. During weekly check-ins, teachers had further opportunities to ask questions and receive individualized help regarding their technology questions. These check-ins were conducted individually or with small groups depending on the competencies being studied.

Assessment

Data was collected from teachers using multiple methods throughout the professional development. The most notable methods of data collection were the competency rubrics and the Technology Professional Development Survey. All teachers self-assessed their skill ability as their first task in August. The rubrics were distributed via Google Classroom assignment during the August professional development session. The use of Google Classroom allowed each teacher to have his or her own copy of each task. Teachers highlighted the skills they believed themselves capable of at that moment. Each teacher revisited the rubric at the end of the professional development session in February to identify new skills acquired throughout the semester. In addition to gaining technology integration skills, success was determined by an increase in self-efficacy and acceptance towards new technology use. The Technology Professional Development Survey identified perceptions of professional development and

teacher comfort levels using technology. This survey was optional for teachers and was also revisited at the end of the semester to document any changes. A copy of the survey questions can be found in Appendix D.

A comparison of means will be used to compare the pre and post data from the survey to determine changes in skill and perception of technology. The skills on the rubrics will also be converted to numerical representations to determine the average increase from each teacher throughout the semester. The professional development will be considered a success if the average increase on the competency rubrics is 0.5 points or higher. An average of 3.5 for the technology survey will be considered a success. In addition to these formal data collection methods, teachers were asked to complete "deliverables" for each session. These deliverables were used for reflection, feedback, and formative assessments to determine what adjustments needed to be made throughout the semester.

The results of the survey and rubrics will be shared with the principal and instructional coaches with the intent of developing further opportunities for technology integration training for teachers. Effective characteristics of the professional development may also be implemented in future training sessions within the district. The deliverables completed by the teachers throughout the professional development sessions have been collected using Google Classroom and various technology platforms. These deliverables can be further reviewed and analyzed to gather a more comprehensive understanding of technology integration.

Conclusion

The 2020-2021 school year has provided teachers across the United States with an opportunity to rethink and improve their teaching strategies. It has forced teachers to integrate technology while teaching both in person and virtually. The initial problem was that teachers

were unprepared and unequipped with the resources and skills needed to provide high quality instruction to virtual learners. Teachers in the Pella Community School District were provided with professional development that focused on technology integration skills. This professional development provided teachers time to learn, explore, and ask questions while designing tasks and tools that could be used immediately in the classroom.

A small team of teachers from each school building read literature, developed rubrics, designed tasks, and facilitated professional development that specifically addressed the needs of the teachers in their given building. The middle school team found research that determined that effective professional development needs to be timely, relevant, hands-on, and collaborative. The importance of reflection and feedback were also determined to be significant factors in building efficacy throughout the building. Data on both skill competency and teacher perception of technology integration will be used to determine the effectiveness of the professional development provided. A successful semester of professional development would mean that all teachers would reach the effective category in the competency rubrics and overall efficacy would increase in regard to technology integration. This would mean that teachers have gained skills and confidence to integrate technology into their daily lessons in order to provide better opportunities for students learning both in person and virtually.

The COVID-19 pandemic created a unique circumstance that led to the development of the Pella Middle School improvement plan. The technology training has provided teachers with skills that can be used beyond the pandemic to create new tasks and opportunities for students. These new tasks will provide students with opportunities to increase their own technology literacy and problem-solving skills.

References

Alsaleh, A., Alabdulhadi, M., & Alrwaished, N. (2017). Impact of peer coaching strategy on preservice teachers' professional development growth in Kuwait. *International Journal of Educational Research, 86,* 36-49. http://dx.doi.org/10.1016/j.ijer.2017.07.011

Avalos, B. (2011). Teacher professional development in teaching and teacher education over ten years. *Teaching and Teacher Education, 27*(1), 10-20. doi:10.1016/j.tate.2010.08.0 07

Avci, Z. Y., O'Dwyer, L. M., & Lawson, J. (2019). Designing effective professional development for technology integration in schools. Journal of Computer Assisted Learning, 36(2), 160-177. doi:10.1111/jcal.12394

Bandura, A. (1997). *Self-efficacy : the exercise of control*. W.H. Freeman and Company.

Bozkurt, A. (2020). Educational Technology Research Patterns in the Realm of the Digital Knowledge Age. Journal of Interactive Media in Education, 2020(1), NA. https://link.gale.com/apps/doc/A636310283/PROF?u=nwcollege&sid=PROF&xid=7794 d7a1

Bozkuş, K., & Bayrak, C. (2019). The Application of the Dynamic Teacher Professional Development Through Experimental Action Research. *International Electronic Journal of Elementary Education*, *11*(4), 335–352. doi:10.26822/iejee.2019450792

Brown, B., Friesen, S., Beck, J., & Roberts, V. (2020). Supporting New Teachers as Designers of Learning. Education Sciences, 10(8). https://link.gale.com/apps/doc/A641985492/PROF?u=nwcollege&sid=PROF&xid=e7d5 282e

Compen, B., & Schelfhout, W. (2020). The Role of External and Internal Team Coaches in

Teacher Design Teams. A Mixed Methods Study. *Education Sciences*, *10*(10), 1c+.

https://link.gale.com/apps/doc/A643531324/PROF?u=nwcollege&sid=PROF&xid=2eabc

e88

Demographics: Pella Area Community & Economic Alliance. (2020, January 08). Retrieved

from https://pella.org/live-here/demographics/

DiBenedetto, C. A., & Myers, B. E. (2016). A conceptual model for the study of student

readiness in the 21st century. *NACTA Journal*, *60*(1A), 28+.

https://link.gale.com/apps/doc/A458803695/PROF?u=nwcollege&sid=PROF&xid=c136f

f7d

Donohoo, J., Hattie, J. and Eells, R. (2018). The Power of Collective Efficacy, in Educational

Leadership, Vol 75, Number 6, pp 40-44.

Iowa Department of Education. (2019). Iowa School Performance Profiles.

https://www.iaschoolperformance.gov/ECP/StateDistrictSchool/DistrictSummary?k=756

6&y=2019

ISTE (2017). 2017 standards for educators. International Society for Technology in Education.

iste.org/standards/for-educators

Joo, Y. J., Park, S., & Lim, E. (2018). Factors Influencing Preservice Teachers' Intention to Use

Technology: TPACK, Teacher Self-efficacy, and Technology Acceptance Model.

Educational Technology & Society,   *21*(3), 48–59.

Koehler, M. (2011). TPACK Image [Photograph]. http://matt-

koehler.com/tpack2/using-the-tpack-image/

Krause, J. M. (2017). Physical Education Student Teachers' Technology Integration Self-

Efficacy. *The Physical Educator*, *74*(3), 476+.

https://link.gale.com/apps/doc/A517442173/PROF?u=nwcollege&sid=PROF&xid=a4cc7

38b

Liu, M., & Kleinsasser, R. C. (2015). Exploring EFL teachers' CALL knowledge and

competencies: In-service program perspectives. *Language Learning &*

Technology, 19(1), 119-138. http://ezproxy.nwciowa.edu/login?url=https://search-

proquest.com.ezproxy.nwciowa.edu/docview/1697493382?accountid=28306

Liu, S.-H., Tsai, H.-C., & Huang, Y.-T. (2015). Collaborative professional development of

mentor teachers and pre-service teachers in relation to technology integration.

Educational Technology & Society, 18(3), 161+.

https://link.gale.com/apps/doc/A427421602/PROF?u=nwcollege&sid=PROF&xid=2a52

9aa8

Liu, S., & Phelps, G. (2020). Does Teacher Learning Last? Understanding How Much Teachers

Retain Their Knowledge After Professional Development. *Journal of Teacher Education*,

71(5), 537+.

https://link.gale.com/apps/doc/A643702419/PROF?u=nwcollege&sid=PROF&xid=f5ca6

6c9

Ma, N., Xin, S., & Jia-Yuan, D. (2018). A peer coaching-based professional development

approach to improving the learning participation and learning design skills of in-service

teachers. Journal of Educational Technology & Society, 21(2), 291-304.

http://ezproxy.nwciowa.edu/login?url=https://search-proquest-

com.ezproxy.nwciowa.edu/docview/2147868849?accountid=28306

Marei, A., Yoon, S. A., Yoo, J., Richman, T., Noushad, N., Miller, K., & Shim, J. (2021).

Designing Feedback Systems: Examining a Feedback Approach to Facilitation in an

Online Asynchronous Professional Development Course for High School Science

Teachers. Systems, 9(1), 10. doi:10.3390/systems9010010

Nicolaidou, M., Karagiorgi, Y., & Petridou, A. (2016). Feedback-based coaching towards school

leaders' professional development. International Journal of Mentoring and Coaching in

Education, 5(1), 20-36. doi:http://dx.doi.org.ezproxy.nwciowa.edu/10.1108/IJMCE-03-

2015-0011

Pan, S. C., & Franklin, T. (2011). In-service teachers' self-efficacy, professional development,

and web 2.0 tools for integration. New Horizons in Education, 59(3), 28-40.

http://ezproxy.nwciowa.edu/login?url=https://search-proquest-

com.ezproxy.nwciowa.edu/docview/968113869?accountid=28306

Rubric for Developing District/Building Profile [PDF]. (n.d.). Iowa Department of Education.

https://educateiowa.gov/sites/files/ed/documents/RubricForDevelopingADistrict-

BuildingProfile.pdf

Sehgal, P., Nambudiri, R., & Mishra, S. K. (2017). Teacher effectiveness through self-efficacy,

collaboration and principal leadership. International Journal of Educational Management,

31(4), 505–517. doi: 10.1108/IJEM-05-2016-0090

Siko, J. P., & Hess, A. N. (2014). Win-win professional development: Providing meaningful

professional development while meeting the needs of all stakeholders. TechTrends,

58(6), 99-108. doi:10.1007/s11528-014-0809-7

Siyam, N. (2019). Factors impacting special education teachers' acceptance and actual use of

technology. Education and Information Technologies, 24(3), 2035-2057.

doi:http://dx.doi.org.ezproxy.nwciowa.edu/10.1007/s10639-018-09859-y

Svendsen, B. (2017). Teacher's Experience from Collaborative Design: Reported Impact on

      Professional Development. *Education*, *138*(2), 115+.

      https://link.gale.com/apps/doc/A518821843/PROF?u=nwcollege&sid=PROF&xid=ea8f1

      21a

U.S. Department of Education, National Center for Education Statistics. (2019). Characteristics

      of Public and Private Elementary and Secondary Schools in the United States: Results

      From the 2017–18 National Teacher and Principal Survey First Look.

Unger, K. L., & Tracey, M. W. (2013). Examining the factors of a technology professional

      development intervention. Journal of Computing in Higher Education, 25(3), 123-146.

      doi:http://dx.doi.org.ezproxy.nwciowa.edu/10.1007/s12528-013-9070-x

Williams, M. E. (2017). An examination of technology training experiences from teacher

      candidacy to in-service professional development. *Journal of Instructional*

      Pedagogies, 19, 1-20. http://ezproxy.nwciowa.edu/login?url=https://www-proquest-

      com.ezproxy.nwciowa.edu/scholarly-journals/examination-technology-training-

      experiences/docview/2009554856/se-2?accountid=28306

Yoon, S. A., Miller, K., & Richman, T. (2020). Comparative Study of High-Quality Professional

      Development for High School Biology in a Face-to-Face versus Online Delivery Mode.

      Educational Technology & Society, *23*(3), 68+.

      https://link.gale.com/apps/doc/A636082310/PROF?u=nwcollege&sid=PROF&xid=5f6d7

      37e

Appendix A

Feedback Responses

Skills

My ability to utilize technology to ...

Went Well	Opportunity to Improve
Posting stuff as material indicates to students that it is not due but is a resource	We should standardize some of how we organized data (Daily work/weekly work) Some students with lots of emails can't manage the inbox/classroom load
Organizing work by day rather than by week (Create Topics called Week 1, Week 2 then the assignments are called Day 01: Monday, May 28: then put all links, assignments, etc in that day)	What day was that assigned for?? Students don't know what
Question feature of Google Classroom (Allows students to reply to each other to facilitate discussion)	Real-time conversation Responses are short and don't have depth and ability to have student to student negotiations
Video to start the week as an overview/learning target	Struggle of Rigor vs Simple Keep it simple enough to understand but provide deep material
Scoring Guides at beginning of project. Then provide feedback based on this guide so students see connection to rubric	Managing Cheating Without them being in person, what are ways we can identify when kids don't have original work
SRG Constant from classroom to virtual classroom helped the students. They understand the 1-4 and then the comment helps them understand how to achieve that target	Facilitate Learning on their own How do we as staff foster students finding the ideas on their own rather than needing direction/examples
	Losing defined time Had a debate setup for a specific time and lots students weren't able to attend and so that made it hard to get an activity together
	Scheduled time How do we make sure we don't schedule over top of each other
	Accuracy How do you know if they are they are truthful. Not calling others, using other computer

Tools/Apps

I found that _____ [enhanced/could enhance] my engagement

Went Well	Opportunity to Improve
Google Meet Doesn't have breakout option to support small group Zoom has this option	The Hub One stop shop for student content "Some didn't know how to find the hub"
Google Classroom Quiz/Assessment Assessment feature - locked browser Less that half have used	Screen Sharing/Computer Navigate Big concern around how to help students navigate their computer and what to click on and some of the students struggle to get support over the phone/chat
FlipGrid Lets them talk them out verbally rather than have to type their ideas out	Google Classroom Docs Assignment When students share work with each other, teachers don't get an email that they have shared with someone else
Google Classroom Rubrics Can attach a rubric to an assignment	Testing Software Like college where we have access to cameras, etc to make sure they stay in front of cam
Google Classroom Comments Not in a document but in the classroom itself Also in the document. Force the students to resolve the comments (and teach them how to)	Internet capacity is still a concern
GoFormative Immediate feedback if they got it correct or not (Gives them a green/red and instructor can comment on a question as they type it)	What should the lockdown time be for the older kids?
Google Classroom Quiz Send results to students with feedback (comments and option to have "default" comment by question)	Google Classroom Notifications what if we had students turn off Google Classroom notifications? or at least give the option so not every thing every teacher does goes to their email
Quizziz Put a timer on questions, and defined time for you to take it	

Training Delivery

I learned a new technolgy skill/tool/etc by _____	
Went Well	Opportunity to Improve
Relevant at the Time - When I am working on a lesson that uses it is when I want to learn it	Teacher Hub
Mini Lessons	Internal resource with information on tools that might be organized by type/objective
Narrow focus rather larger	Make it collaborative
Social groups to provide answers when I need it	

Appendix B

7-12 Competency Rubrics

1. Deliver Effective Instruction				
Indicators	**Beginning**	**Developing**	**Effective**	**Exemplary**
1.1 Making desired learning outcomes are clear	• I can state the learning outcome at the beginning of the unit on Google Classroom	• I can state the learning outcome each week on Google Classroom	• I can state the learning outcome for each day on Google Classroom.	• I can state the learning outcomes in multiple formats and locations (i.e. video, Google classroom, other tools) each day
1.2 Facilitating live virtual lessons	• I can create a recorded lesson and respond to questions	• I can create and host a virtual lesson	• I can create and host a virtual lesson • I can create and manage breakout rooms • I can share my screen during virtual lessons • I can record my live virtual instruction	• I can use advanced features (rearrange breakout, create co-hosts, change display view, etc) • I can utilize other web 2.0 tools while in the virtual meeting
1.3 Creating and uploading video lessons	• I can find and share video content made by other users (YouTube, Khan Academy, etc)	• I can create a teaching video (screen or video)	• I can make a screen recording and a video recording of a lesson • I can upload and share a video	• I can edit multiple video clips together
1.4 Providing collaborative learning opportunities	• I can provide opportunities for large group conversation	• I can facilitate a large group conversation	• I can create and manage breakout rooms during live virtual lessons • I can manage a chat box during a live virtual lesson	• I can develop, assign, and support group projects completed outside of class
1.5 Providing formative assessment opportunities throughout the lesson	• I can create and assign a formative assessment	• I can assign a formative assessment that is completed after the lesson has been taught and give feedback	• I can use formative assessments during lessons (examples: live polling, exit tickets, quizizz, etc.) to check for understanding and provide meaningful feedback	• I can use multiple forms of formative assessment during lessons to check for understanding and provide meaningful feedback • I can create formative assessments during live instruction to gather information
Supported Tools	Zoom, YouTube, Screen-recording, Google Classroom, Formative Tools (GoFormative, Edpuzzle, Playposit, Google Forms)			

2.	Facilitate Student Motivation			
Indicators	**Beginning**	**Developing**	**Effective**	**Exemplary**
2.1 Providing active learning opportunities	• I can use the Google Suite to provide learning opportunities	• I can use one web 2.0 tool to support the learning outcome	• I can use a variety of web 2.0 tools to support the learning outcome	• I can encourage students to use a variety of web 2.0 tools
2.2 Generating curiosity and critical thinking	• I can address student questions	• I can model curiosity and critical thinking to new activities, ideas, and issues	• I can provide opportunities for students to ask questions and share curiosity	• I can develop lessons/units that are driven by student curiosity
2.3 Creating autonomy through choice	• I can provide additional resources for students to use	• I can provide optional extension and re-teaching opportunities for students	• I can provide multiple ways for students to demonstrate their learning.	• I can provide differentiated instruction for students with criteria for each activity
Supported Tools	WeVideo, Kahoot!, Padlet, Jamboard, Youtube, Voicethread, Edpuzzle, Deck.Toys			

	3. Create a positive social presence			
Indicators	**Beginning**	**Developing**	**Effective**	**Exemplary**
3.1 Maintaining open channels of communication	• I can communicate with students through email • I can operate a Learning Management System (LMS)	• I can create online meetings for one-on-one or small group help • I can post questions for student responses • I can create an environment for two-way communication and connection	• I can create online meeting with breakout groups • I can create a live or recorded direct instruction • I can create a weekly agenda • I can create a means for students to ask question and receive answers • I can monitor the two-way communication and connection • I can use advanced tools in the LMS for communication	• I can create differentiated instruction on the LMS • I can facilitate substantive conversation • I have a remediation plan for those not communicating or making connection
3.2 Facilitating student collaboration	• I can create a group email for student collaboration • I can post discussion for a group project	• I can facilitate live, full-class discussion • I can host group check-in meetings	• I can facilitate an online discussion board • I can create a method for students to showcase group work	• I can prepare students to facilitate and record independent small group discussion • Students and teachers can use the LMS to assign specific sections to students or groups of students
3.3 Addressing online SEL needs	• I know students have SEL needs • I have a routine established for my students	• I can establish norms to help students feel confident in sharing with teacher • I can use at least 1 tech tool to allow students flexibility in communication and product creating	• I can provide and monitor SEL opportunities weekly • I can respond to or develop plans for students struggling with SEL (contact parents/guidance if needed) • I can establish norms to help students feel confident in sharing with peers • I can use at least 2 tech tools to allow students flexibility in communication and product creating	• I can respond beyond students who are struggling • I can use a variety of tech tools to allow students flexibility in communication and product creating
Supported Tools	Jamboard, Voicethread, Padlet, +@ feature, Flipgrid, Google Meet			

4. Utilize assessment for student learning				
Indicators	**Beginning**	**Developing**	**Effective**	**Exemplary**
4.1 Setting clear performance expectations	• Teacher lists expectations	• I can create a rubric	• I can share a rubric about the expectations prior to the assessment • If applicable students self-evaluate using rubric	• I can facilitate a conversation about rubric scores
4.2 Predicting and addressing student misconceptions	• I can list possible student misconceptions based on experiences	• I can use direct instruction to address misconceptions	• I can create a method for screening for misconceptions	• I can facilitate a conversation that is student led to address misconceptions
4.3 Providing opportunities for student reflection	• I can ask students to reflect on learning	• I can have students rank their understanding of each learning outcome	• I can have students reflect on their learning progress	• I can have students set goals for future learning and develop plans to reach those goals
4.4 Giving specific feedback	• I can give students a score • I can use a LMS to provide and record feedback	• I can list why a student received a score • I can make a rubric if necessary to explain student score	• I can give students suggestions about how to improve score	• I can use a tech tool to provide an opportunity to conference about feedback
4.5 Using assessment data to inform future instruction	• I can get data from formative assessments	• I can use data from formative assessments to guide instruction	• I can provide a relearning opportunity	• I can have students use formative assessment scores to evaluate their current level of understanding to make a plan of what to do next
Supported Tools:	Flipgrid, Go Formative, Gimkit, Quizzizz, Edpuzzle, Quizalize			

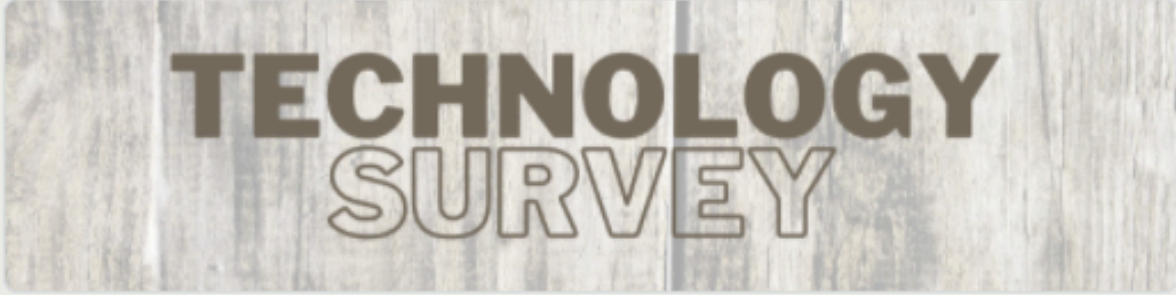| 5.	Prepare Students for Virtual Learning
Skills	**Students are able to:**
5.1 Students are able to create and upload videos	• Record using web camera or phone • Upload a video from phone to computer • Record screen • Create and upload videos
5.2 Students are able to manage their time efficiently as virtual learners.	• Attend live instruction and/or view recorded lessons • Complete all tasks assigned by the due date • Complete formative assessments • Prepare for formative and summative assessments • Students can minimize distractions while working on school work Tips for Time Management: https://www.northeastern.edu/graduate/blog/time-management-tips-online-students/
5.3 Students adhere to rules of proper online etiquette.	• Honor the Pella CSD Acceptable Use Policy you signed when you received the device • If you have anything in your home you prefer not to be seen, please turn off your video conferencing option • Be Respectful: • Respect privacy, diversity, and opinions that differ from yours • Avoid sharing others' personal and professional information • Be Responsible: • Practice good digital citizenship • Be Polite: • Speak and interact similarly to how you would in person • Mute microphone when not actively participating • Be Scholarly: • Use proper language, grammar, and spelling, and avoid misinforming others when you do not have the answer
5.4 Students are able to effectively communicate with teachers and peers	• Check emails daily • Respond to emails within 24 hours (on school days) • Participate in virtual discussions • Create and host a google hangout with other students • Collaborate and communicate with peers • Ask clarifying questions to the teacher

Appendix C

Professional Development Overview & Timeline

Date	Focus/Objective	Tools/Content Covered	Deliverable/Formative
August 26	Deliver Effective Instruction using Google Classroom	Google Classroom	Checklist
September 16	Deliver Effective Instruction by Creating Videos	Screencastify, Screencast-o-matic, QuikTime, Zoom, YouTube, Edpuzzle, Playposit, Google Form	Google Form – Describe how you spent your time advancing your skill level according to the PD checklist.
September 23	Create a Positive Social Presence	Jamboard, Padlet, Voicethread, Google Classroom +/@, Google Classroom Questions, Flipgrid	Padlet – Share a tool that you can use that provides students with choice and allows them to creatively express their views in the classroom.
September 30	Deliver Effective Instruction and Utilize assessment for Student Learning	GoFormative, Google Forms, Google Classroom Rubrics, Flipgrid	FlipGrid – share a tool that was found and how you could use it in your classroom to provide feedback
October 21	Deliver Effective Instruction and Create a Positive Social Presence using Zoom	Zoom & Google Meet, Swivl Cameras & Microphones	Google Form (by section) – Share any questions you still have about setting up and running to the tools to teach virtually.
November 4	Facilitate Student Motivation	Quizziz, Kahoot!, GimKit, Deck.Toys	Completion of Deck.Toys reflection
December 2	Facilitate Student Motivation and Utilize assessment for Student Learning: Student product choice	Canva, WeVideo, Google Sites, Prezi, Blogging/Vlogging, Lucid Chart	Add a share link or project to the Google Document
December 9	Extended Learning Opportunity/Choice Showcase	Google Slides, Doc, Spreadsheets, Gmail SAMR & TPACK models PLNs and how to find new resources to match the task	Create a slide on the shared slides with a link or video explaining the resource you discovered.
January 13	Extended Learning Opportunity/Choice Showcase	Google Rubrics & WEB 2.0 tools	Explore one of the websites and create an activity that can be used in your classroom.
February 1	Prepare Students for Virtual Learning	Google Add-ons and Extensions Review virtual learning expectations	Reflection Revisit Checklist

Appendix D

Technology PD Survey Questions

Technology PD Survey

A technology integration committee at the Pella Community School District has developed a professional development course and would like to evaluate the effectiveness and impacts of the program. The following survey asks about your beliefs, confidence, and abilities using technology within the educational setting. The survey is estimated to take 10 minutes with a followup survey at the end of the semester. The survey results will be used to determine the effectiveness of the professional development model. This survey is voluntary and your decision whether or not to participate will not affect your relationship with the Pella Community School District. For the survey to be most useful, it is important that you respond as honestly as you can. All the information you share will be kept confidential and private. In order to gain a better understanding of the program's effectiveness, focus groups will be conducted on a voluntary basis at the end of the experience. Please note that we will not identify individuals when we report the results of the survey. If you agree to take this survey, please sign this form by typing the last four digits of your phone number below. This "signature" will be used to link your current and future survey responses.

Read the description above and enter the last four digits of your phone number below.

Your answer

Next

Technology PD Survey

Teacher Background

Including this year, how many years have you been teaching?

○ 1-5 years

○ 6-10 years

○ 11-15 years

○ 16-20 years

○ 21-25 years

○ 26-30 years

○ 31+ years

What type of class do you teach?

○ Core

○ Elective

○ Music

Back   Next

A formal technology course is an effective way for me to learn about technology integration.

○ ○ ○ ○

Attending a conference is an effective way for me to learn about technology integration.

○ ○ ○ ○

Experimenting on my own is an effective way for me to learn about technology integration.

○ ○ ○ ○

Project-based learning is an effective way for me to learn about technology integration.

○ ○ ○ ○

Back   Next

Beliefs of how teachers learn to use technology.

Use the scale to identify your current beliefs

	Strongly Disagree	Disagree	Agree	Strongly Agree
Attending a presentation on technology is an effective way for me to learn about technology integration.	◯	◯	◯	◯
Online videos are an effective way for me to learn about technology integration.	◯	◯	◯	◯
Peer collaboration is an effective way for me to learn about technology integration.	◯	◯	◯	◯
The use of professional learning networks (Facebook, Twitter, Pinterest, blogs, etc.) are effective ways for me to learn about technology integration.	◯	◯	◯	◯

Beliefs of how technology impacts students

Use the scale to identify your current beliefs

	Strongly Disagree	Disagree	Agree	Strongly Agree
I believe technology is an effective way to improve student engagement.	○	○	○	○
I believe technology promotes critical thinking.	○	○	○	○
I believe technology creates collaborative opportunities.	○	○	○	○
I believe technology is an effective tool to provide feedback.	○	○	○	○
I believe technology can be used to meet the social and emotional needs of students.	○	○	○	○

Teacher confidence in technology integration

Use the scale to identify your current beliefs

	Strongly Disagree	Disagree	Agree	Strongly Agree
I am confident using technology to deliver effective instruction.	○	○	○	○
I am confident using technology to facilitate student motivation.	○	○	○	○
I am confident using technology to create a positive social presence.	○	○	○	○
I am confident using technology to assess the needs of students.	○	○	○	○
I am confident using technology to differentiate to meet the needs of students.	○	○	○	○