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Introduction

It is difficult to be at the forefront of change. As an elementary technology teacher, our district is in the process of moving towards a 1:1 device program. As a technology team, we ask ourselves the question, "What happens when this program is implemented? What happens to us, as teachers? What happens to our labs? Will we still have a job?" Enter the Educational Technology program at Boise State University. Seeing this transition quickly approaching, and after fighting so hard for the job I currently have, it became necessary to seek training to prepare me for whatever job my district needed me to do to help prepare for this initiative. This paper will provide examples of my journey through the Masters of Educational Technology program. The projects that I have created throughout this program are intended to be used at some point in the schools and grades where I teach. I have designed them so that I could hand them to any teacher and say, "Here. Let us see how we can fit this into your curriculum." The goal of this rationale paper is to not just share the work that I have created, but also to demonstrate how they connect to the five AECT Standards. I have organized this rationale so that for each standard indicator, there is a link and description to one of my projects demonstrating its relationship to the standard. This look back has been a humbling experience, as there were some projects that I have not looked at in almost two years. I really enjoyed this program, and may take more courses from BSU in the future.

Standard 1 - Content Knowledge

Indicators

1. **Creating** - Candidates demonstrate the ability to create instructional materials and learning environments using a variety of systems approaches. (p. 81)

Virtual Rock Field Trip

EDTECH 502: Internet for Educators

When you think about learning environments, you may typically think about a conventional classroom. This Virtual Rock Field Trip takes you out of the classroom and creates an online environment suitable for learning. On your quest, the students will learn about different rocks and minerals and even explore an online quarry. It is designed to be self-paced and allow students the opportunity to learn more than just what they are asked.

This project was designed and leveled to be completed by a third grade class, as rocks and minerals are part of their science curriculum. It aligns to the indicator because creates a learning environment in which multiple learning methods can be utilized. Students are asked to visit websites for research, watch videos, and even provide answers to questions so that students can check their work. Creating a site for this purpose is a skill more teachers should utilize to help differentiate their teaching.

2. **Using** - Candidates demonstrate the ability to select and use technological resources and processes to support student learning and to enhance their pedagogy. (p. 141)

Interactive Presentation

EDTECH 541: Integrating Technology Into the Classroom Curriculum

The fifth graders in our district learn about several European explorers in their quest to settle parts of North America. I decided to create an interactive PowerPoint that almost reads like a story. Students would follow through the presentation and discover links to different web and video resources. In a self-paced activity, they would be able to re-read or rewatch certain segments in order to fully understand where each explorer came from, why they traveled to North America, and what they found.

There are a variety of resources offered throughout this PowerPoint, from simple animations, to websites, maps, and videos. Students learn in a variety of ways, and this presentation enables all students to learn something. Students are able to interact with the presentation by using buttons and hyperlinks, making it more engaging. Most presentations are subject to the speaker distributing information to the audience. Allowing the audience to participate in the presentation can allow the speaker to, "gauge the audience's level of interest and understanding," (Isaacs, Morris, & Rodriquez, 1994). The presenter can than adjust future presentations as necessary to accommodate audiences and thus enhance pedagogy.

3. **Assessing/Evaluating** - Candidates demonstrate the ability to assess and evaluate the effective integration of appropriate technologies and instructional materials.

Utilizing iPads to Write a Book on Animals

EDTECH 503: Instructional Design

There are a few classes in my buildings that teach through a hybrid model. One of those classes also incorporates iPads on top of their usual PC laptops as a learning tool. When Lorin Anderson and D. Krathwohl rewrote Bloom's Taxonomy, they replaced traditional nouns with verbs. According to this model, "Creating" sits atop the new pyramid as the zenith of cognitive understanding (Churches, 2009). By integrating the book writing process into a lesson on animals, teachers are creating a unique and effective learning experience for their students in which it is easier for them to share their final product

with family and friends. Teachers would start by allowing students to do some research on an animal group while also demonstrating citation methods. By using the "Book Creator" app for iPads, students will be able to share what they researched with others.

Most of our students are "touch enabled," making this a perfect project for students to get creative. Mobile learners are, "continually on the move," (Sharples, Taylor, Vavoula, 2006). "We learn across space as we take ideas and learning resources gained in one location and apply or develop them in another" (Sharples, Taylor, Vavoula, 2006). Students can take what they experience writing this book in class and it will hopefully influence them to write more elsewhere.

4. **Managing** - Candidates demonstrate the ability to effectively manage people, processes, physical infrastructures, and financial resources to achieve predetermined goals. (p. 178)

The Effectiveness of LEGO Robotics at Simmons

EDTECH 505: Evaluating Educational Technologists

LEGO robotics is a passion of mine. Having mentored varying levels of robotics over the past few years, I can say that it is the ultimate activity for building higher-level thinking. When you think of S.T.E.M. (Science, Technology, Engineering, and Math), LEGO robotics touches on every single concept. Through learning through collaboration into the mix and students are building some awesome 21st century skills! I attempted to measure our success by evaluating our program's effectiveness. I had hoped that our administration would take notice of the skills we were building with students who *wanted* to stay after school to learn.

Our program started with nothing. We now have a flourishing budget, administrative support, and a high level of student engagement. I have had to communicate with colleagues, parents, public relations groups, and funders of grants. We had an idea of where we wanted to take our program, but it just continued to grow; this report shows that in the data. Similar studies have been done, with

presumably much more valid data, and at least one concludes that through participation in a LEGO robotics course, student views towards engineering become much more positive (Karp, Gale, Lowe, Medina, & Beutlich, 2010) Students described their experience in a competitive atmosphere as "Fun," and, "Great," while also discussing their joy through success. Our students always have similar concepts. I have heard from a few parents that our students' career paths have changed thanks to their involvement in our program. Based on the outcomes of this study and program, I have proven that I can effectively manage people, processes, physical infrastructures, and financial resources to achieve predetermined goals.

5. **Ethics** - Candidates demonstrate the contemporary professional ethics of the field as defined and developed by the Association for Educational Communications and Technology. (p. 284)

Digital Divide & Digital Inequality

EDTECH 501: Intro to Educational Technology

In the two years since this project was completed, I can say that our district is making strides to close the digital gap. This project attempted to describe the digital divide and inequality within the district that I teach through a themed slide show. Our district offers a very two-sided dynamic to our district, a very low-income versus higher-income dynamic. The goal of the presentation was to share it with my administration in hopes of engaging in a conversation about how I can help develop anything that would change the district's current path.

We have an ethical responsibility as teachers to give each student an opportunity to learn. Some students will come to us with more background knowledge than others. This demonstrates the digital divide. Meanwhile, one of our schools offers a higher device to student ratio than the others. This demonstrates the inequality among schools. Not every student can master the same technology skills

throughout the district, skills that are real-world applicable, yet they all learn sufficient test taking strategies.

STANDARD 2: CONTENT PEDAGOGY

Indicators

1. **Creating** - Candidates apply content pedagogy to create appropriate applications of processes and technologies to improve learning and performance outcomes. (p. 1)

Hypermedia Integration

EDTECH 541: Integrating Technology Into the Classroom Curriculum

A la the old "Wayback Machine," students will scan their way through American History. Meant to be an activity towards the end of fifth grade, students would use devices to scan QR codes that will take them through a series of videos in which they will answer questions about history. Being able to pause videos and talk to other members of their group gives every student the advantage of collaborative learning. Students may become connected with both internal resources or external resources, allowing them a wider range of exposure to select context appropriate topics (Walsh, 2010).

In place of lectures or worksheets, students will be treated to a thematic scavenger hunt in which students will need to seek out QR codes. By getting students moving around, you are engaging them in a non-traditional learning environment, thus potentially changing learning outcomes. I used a series of YouTube videos with engaging questions that students would need to discuss and answer throughout this project. Being able to embed these videos on my website is a great way to curate sources and keeps everything together and organized for the next time I would like to do this project.

2. **Using** - Candidates implement appropriate educational technologies and processes based on appropriate content pedagogy. (p. 141)

Netiquette

EDTECH 502: Internet For Educators

My Netiquette page is designed to give students and parents a guideline to engage in conversation about exploring and communicating in cyberspace. Internet safety is a topic that is not covered enough. Our librarians teach students how to research using specialized databases, however when students go home, they are going to Google or to Bing to look up their information, because that is what their parents do. We should be talking about good Netiquette more than what we are. This project seeks to educate students on appropriate use of an online environment, which could be an online *learning* environment..

Not only should we talk about it, but as teachers, we should model it. Students can learn from us both inside and outside of the classroom. I created a simple website using HTML and CSS to list some important talking points for parents and students. Having informational resources on your website available for parents is a great way to engage in conversation and remind not just students, but parents too, that there are certain rules one should follow when in cyberspace; oftentimes parents are the ones that need reminding more than the students!

3. **Assessing/Evaluating** - Candidates demonstrate an inquiry process that assesses the adequacy of learning and evaluates the instruction and implementation of educational technologies and processes (p. 116-117) grounded in reflective practice.

Let's Rock This School!

EDTECH 542: Technology Supported Project-Based Learning

"Let's Rock This School!" was designed with my third graders in mind. One of our elementary schools is in the process of being replaced. There is a lot of digging and construction work going on just feet from our building. Part of the third grade science curriculum focuses on rocks and minerals, and what better way to tie-in and create authentic learning than linking rocks and minerals with the construction of our new school! Students would learn what local stone is mined in our area, (since one of the building project goals was to use local materials), and they would follow the manufacturing process all the way up to possible installation in our new school.

When it comes to inquiry-based learning, "inquiry activities provide a valuable context for learners to acquire, clarify, and apply an understanding of science concepts" (Edelson, Gordon, Pea, 1999). By having a say in how materials will be used in the new school, students will have a buy-in to learning; they will believe what they learn will make a difference.

4. **Managing** - Candidates manage appropriate technological processes and resources to provide supportive learning communities, create flexible and diverse learning environments, and develop and demonstrate appropriate content pedagogy. (p. 175-193)

Technology in the Content Area

EDTECH 541: Integrating Technology Into the Classroom Curriculum

Study of the Civil War can offer a fascinating look into life in the mid-1800's. This "Technology in the Content Area," project offers an in-depth look into life during the Civil War, but more importantly, offers a variety of ways for students to demonstrate their understanding. From using Google Maps and primary sources, to creating movies or music in iMovie or Garageband, this project offers something for everyone, allowing a flexible and diverse learning environment to take shape.

Because every student learns differently, there are a lot of ways for students to demonstrate understanding. Throughout the course of a semester, trimester, or however long the Civil War unit lasts, it is not possible to complete all of the assignments that this project offers. Therefore, teachers would need to determine if they offered some as a choice, or if they would assign them any other way. Teachers would hopefully only need to partially micromanage the students who are working on their projects, with the hope that students practice managing themselves throughout the creation of their final products.

This project was the first in which I used Glogster to create an online "billboard" of information. While I am not necessarily a fan of how it turned out, it offers a visual mapping of projects and directions for the students to easily navigate. Through observations and check-ins with the students, teachers will be able to assess where students are at and how they are progressing.

5. **Ethics** - Candidates design and select media, technology, and processes that emphasize the diversity of our society as a multicultural community. (p. 296)

Communication

EDTECH 554: Managing Tech Integration

It feels like so long ago that I asked our Home and School Association for podcasting equipment. I had this dream that I could have students create a radio show and highlight the news and happenings within our building. These shows could be made available on our school website and allow parents and the community to get an inside look into our school. Sadly, this goal has not realized its full potential yet. However, in this artifact, I play around with podcasting, recording three segments of radio that highlight different interests. In one podcast I interview one of my students about how he makes things that interest him. I sent his parents the link to the website so they could hear our interview and they really enjoyed it. In another podcast, I talk about our LEGO robotic program. We had 78 students participate in robotics last year, and all of those students have become better thinkers and collaborators because of it.

There are many different types of students and all of them learn differently. Some learn better by moving, others by singing, and some by studying for hours every night. There are also students who learn by making and failing at things, that succeed when they are not pressured by a test. If students were able to write their own radio show because they like to talk, they are doing so much more than talking; they are writing, collaborating, and learning by doing. LEGO robotics thrives on student resilience. Every student can fail and every student can learn how to overcome failure.

STANDARD 3: LEARNING ENVIRONMENTS

Indicators

1. **Creating** - Candidates create instructional design products based on learning principles and research-based best practices. (pp. 8, 243-245, 246)

Blended Learning

EDTECH 554: Managing Tech Integration

In our technology curriculum, third grade is a cornerstone of learning. At this point, our goals reflect a complete understanding of PowerPoint operations. We write stories or share biographies in PowerPoint, and everything is created by hand. Because everybody learns at a different pace, in this project, I attempted to initiate a hybrid or blended model approach into a lesson. Students would cycle between learning something new with me in one group, typing in our typing program in another group, and work on what they were working on last class and formulating questions in a third group. After 10 minutes, we would rotate, with the last 15 minutes of our 45 minute class used for project time. The typing program would give me data on student understanding of typing, the kids with me will give me direct feedback on how the project is going and allow me to connect with them better, and the students in

that third group will be informally checking for understanding, with students held accountable for review questions they might have.

Blended Learning has become a buzzword, maybe even a stepping stone on the path towards 1:1 computing. This was my first attempt to utilize this particular learning style. The attempt, however, is slightly flawed. While Charles graham states,

> "The working definition...reflects the idea that BL (Blended Learning) is the combination of instruction from two historically separate models of teaching and learning: traditional F2F (face to face) learning systems and distributed learning systems. It also emphasizes the central role of computer-based technologies in blended learning" (Graham, 2006).

What I believe is slightly flawed, is that the computer-based technologies do not accurately reflect the goals of the lesson; meaning that while we are learning about PowerPoint, the typing program is compiling data reflecting the speed and accuracy of those typing.

2. **Using** - Candidates make professionally sound decisions in selecting appropriate processes and resources to provide optimal conditions for learning (pp. 122, 169) based on principles, theories, and effective practices. (pp. 8-9, 168-169, 246)

Professional Development

EDTECH 554: Managing Tech Integration

As my role as a technology teacher begins to shift from teacher of kids to teacher of teachers, I expect to be called upon more to develop more training opportunities for teachers. For this project, I came up with a few things that I was passionate about that I thought other teachers should know, such as incorporating social media or Twitter into their classroom or screencasting their lessons. I could have

elaborated on either of these topics, but I chose to show teachers how to screencast a lesson using a variety of tools. This project connects to this indicator by helping teachers providing training on a teaching technique that could be an optimal form of learning for some students.

The culminating point to the activity would have the teachers creating a simple screencast right there. There are several benefits to knowing how to create screencasts, such as developing a flipped classroom model, recording directions for a project or math concept for parents, or simply recording your substitute lesson plans for the day. In one study done by Kathleen Mathison, she found that:

> "(They) liked hearing the instructor's voice and seeing the activities captured on the instructor's screen, such as pointing, highlighting, and showing supplemental material (e.g., lecture slides). Students felt that the audiovisual component made the feedback more engaging, comprehensive, and effective and that hearing the instructor's voice made the feedback feel more "personal" and "real" (Mathieson, 2012).

Screencasting is something that every teacher should know how to do. Imagine how appreciative parents will be when their students bring home a math problem that they have no idea how to solve. Teachers could have a reference page on their website dedicated to demonstrating the methods that they teach to solve problems. Parents and students can have concepts reinforced at home to help them study. There are some amazing opportunities with free software that more teachers should utilize. Hopefully I will actually get to practice this project with other teachers in a real-world setting.

3. **Assessing/Evaluating** - Candidates use multiple assessment strategies (p. 53) to collect data for informing decisions to improve instructional practice, learner outcomes, and the learning environment. (pp. 5-6)

Let's Rock This School! (Assessments)

EDTECH 542: Technology Supported Project-Based Learning

This activity bundles all of the assessments for the "Let's Rock This School!" project. From reflections, to concept maps, to even assessing math concepts in science, this activity offers a comprehensive array of assessments. As third graders finish with these activities, it gives the teacher an idea of pacing, and whether or not items need to be more thoroughly covered prior to other activities, such as the schedule field trip. These assessments are really meant to be checkpoints throughout the entire project and inform the teacher of individual student progress.

These assessments offer students an opportunity to demonstrate learning through multiple modalities. Math, writing, and even drawing are used throughout this project to check understanding. Students will be working both individually and collaboratively throughout the project, so there will also be opportunities for students to help each other through these assessments.

4. **Managing** - Candidates establish mechanisms (p. 190) for maintaining the technology infrastructure (p. 234) to improve learning and performance. (p. 238)

District Technology Rollout

EDTECH 554: Managing Tech Integration

This was a project that fascinated me, as our district is in the midst of implementing a 1:1 rollout. At the time of creating this technology rollout and rubric, I knew only a little information regarding the program and was left to speculate the rest. This made it interesting, as I worked to develop this project with a small group. About a year later, our district has only made tiny steps towards our goal, thus proving that it is easier to theorize a rollout than it is to implement it. I had shared this document with the

head of our technology curriculum department at the time of its creation and he was intrigued. He put

something of his own together, but again, the theory did not match the practice. There are too many

factors that go into decision making and implementation to stay on a perfect timeline.

I came to find out once this course was over, that communication, while great in developing this

project, is not always as smooth during a technology rollout. There were things that needed to be done to

solidify the infrastructure for an increase in devices and training for the teachers that needed to start. This

project touched on infrastructure and training, but the timeline was way off. Managing a district-wide

infrastructure is not an easy feat due to the complications in communication, funding, and current building

infrastructures, however, a proper infrastructure is essential for effective learning to take place.

5. **Ethics** - Candidates foster a learning environment in which ethics guide practice that promotes
   health, safety, best practice (p. 246), and respect for copyright, Fair Use, and appropriate open
   access to resources. (p. 3)

Copyright Scavenger Hunt

EDTECH 502: Internet for Educators

Copyright and plagiarism are talked about in our technology and library classes and sadly not

really anyplace else. There are some content teachers who put citing sources on the backburner in lieu of

students finishing their work faster. This scavenger hunt was designed to make learning engaging and

mobile, while teaching a respect for copyright and Fair Use. This project may work best for third through

fifth graders who need to understand the difference between copyright and plagiarism. There are QR

codes attached to the worksheet so that teachers may allow students to be mobile in their learning.

This project uses a combination of websites, videos, and documents, including our own district's Acceptable Use Policy, to drive home the idea that students should cite their sources. It is really neat to see the students look at the AUP because while teachers, or myself, may make the rules in the classroom, the AUP sets the rules for the district, so it shows them consequences for their actions on a larger scale. The Acceptable Use Policy should be disseminated and well-understood from the student-level all the way up through the teachers and parents. It should describe positive interactions with the internet, as well as consequences for illicit behavior (Mancroft, 1998).

"QR codes are a convenient way to add the virtual to the physical," (Ashford, 2010). Students enjoy going on a hunt to find the codes and then scanning them to dive into the material. By simply adding that layer of access, students become more engaged in the learning process. Websites such as qrstuff.com allow you to paste a web URL into a field to create a QR code. This can be done with almost any type of media. There are many ways in which teachers could use codes like this too, such as sending a code home to parents that would lead to a website of student work or having students check the answers to their math problems.

6. **Diversity of Learners** - Candidates foster a learning community that empowers learners with diverse backgrounds, characteristics, and abilities. (p. 10)

mLearning Activity

EDTECH 502: Internet for Educators

This project is geared towards third graders and plugs into the "Let's Rock This School" project. Students work in partners to identify rocks on their school grounds. By incorporating movement, an iPad,

and Skitch, an app allowing students to annotate pictures, every student should be able to complete this project no matter of a student's background or ability..

iPads have a number of accessibility options. If a student cannot read, the iPad can read the directions for you. If students cannot speak, there are apps that help the children generate words. By working with partners, students will be able to communicate any issues they might have with each other or with the teacher. This ability gives the students the power to work with anybody and do almost anything.

Many of the projects that I have created at Boise State have involved iPads and movement. I do feel that it is important to have students moving around from time to time. Learning should not be limited to the four walls of a classroom for any student, so any time I can incorporate movement in my lessons, I am going to do that.

STANDARD 4: PROFESSIONAL KNOWLEDGE AND SKILLS
Indicators

1. **Collaborative Practice** - Candidates collaborate with their peers and subject matter experts to analyze learners, develop and design instruction, and evaluate its impact on learners.

Strategic Change

EDTECH 554: Managing Tech Integration

This particular project has two parts; analyze a colleague and determine where they rank in terms of their development as a 21st century educator, and create a goal that could be shared with colleagues to help improve their digital literacy. In order to explain my colleague, I created a "Fakebook" profile page,

using details about her to fill in her information. I wanted to use a resource that teachers could also use in their classroom. Students could use Fakebook to create social network pages for anybody in history.

The colleague that I analyzed was our librarian. Her and I, for a period, were grade-level partners, in that we shared a unique schedule that allowed for better communication and collaboration on projects. Looking back in our schedule and time together, (it has since changed), it is interesting to see how she has grown as a 21st century educator through her appreciation and use of mobile devices and cloud computing software.

As the leader of a technology committee, I seem to spearhead a lot of initiatives with very little help from my team. The goals in this project of transforming teacher webpages into a place where students can go for information and content related to class kind of fell apart when initiated. Each member of the team was going to share a different way to enhance a website for either students or parents. It was a great plan, and the collaboration by peers would be able drive lessons designed around webpages and enhance the learning process.

Leadership - Candidates lead their peers in designing and implementing technology-supported learning.

[Leadership](#)

EDTECH 554: Managing Tech Integration

If you can believe it, being from the Philadelphia area, I have not seen any of the Rocky movies until college. Once I was able to see and appreciate the legend of Rocky, I really dug into the writing behind the movie and enjoyed all of the motivational quotes and scenarios that come with a Rocky movie. If I had to describe my leadership as an analogy, I would have to use the Rocky formula: I substituted as a nobody in a middle school for years until somebody gave me a shot to prove what I can do. I use those

past experiences to build on current adventures and interactions with colleagues to be the best that I can be.

There are teachers that will not want to integrate technology. They either do not see a need for it or complain that there is not enough time. Rocky has inspired people all over the world simply by running up an art museum's steps. That feeling of reaching the zenith because you have put everything together is where I strive to convince my colleagues they can get. It does not matter how old a teacher is, or how little time they might have, I believe that I can show them a better way to do what they are doing using some sort of technology. I can make the tools work for their curriculum.

Looking back on this artifact makes me want to hang it up in my classrooms. It is a reminder of how tough I may need to be, mentally, to work with teachers who may not understand or accept the integration process. My role as an educator will shift from a technology special area teacher to a coach or mentor. How will I overcome that shift? I need to have the eye of the tiger.

3. **Reflection on Practice** - Candidates analyze and interpret data and artifacts and reflect on the effectiveness of the design, development and implementation of technology-supported instruction and learning to enhance their professional growth.

Tech Trends

EDTECH 501: Intro to Educational Technology

This Tech Trends Prezi was one of the first projects I put together two years ago. At the time, our district was in the very early planning stages of discussing a 1:1 device vision. Our district leadership was discussing many different possibilities that involved equipment and cloud access. I wanted to share with my administrators the value of using Chromebooks to access student cloud storage. While I know that

my voice was not going to be loud enough to sway anybody's opinions, actually holding the conversation showed that I was on board with the next phase of learning within our district.

This artifact showed my administrators that I was not afraid to have the conversations that may ultimately lead to my repositioning (or even furloughing) within our district. Students need access to the right technology for the right reasons at the right times. With students able to have access to their work from home, we are effectively changing the way we teach and assign work. I was setting myself up to be called upon as a trainer to help develop methods for teaching within this cloud environment, and I was ready two years ago. I had reflected on the current state of technology education within my district and have sought to improve myself in the field of technology integration to help move our district forward.

4. **Assessing/Evaluating** - Candidates design and implement assessment and evaluation plans that align with learning goals and instructional activities.

21st Century Curriculum

EDTECH 554: Managing Tech Integration

In "Roadside Racing," students must make an "Amazing Race," across the United States, learning about each region along the way. By using resources on a Weebly-created website, students will need to keep track of expenditures while learning about areas of our country. These fourth graders will then need to choose a presentation method to share with others what they have learned and discovered along the way. Through this presentation method, teacher's will be able to assess knowledge and allow students to practice their presentation skills.

Weebly.com is probably my most valued resource that I have gained in my time at Boise State. It has enabled me to create any sort of website I would like that looks great. I have created webquests like this using a Wiki like WetPaint, but this was so much easier. Allowing students to navigate their way

through at their own pace, even if it feels like a race, give them the power to control their learning. Students know the end game, the rubric is available to them. Letting them explore on their own gives them the power to manage their own project.

5. **Ethics** - Candidates demonstrate ethical behavior within the applicable cultural context during all aspects of their work and with respect for the diversity of learners in each setting.

Assistive Technology

EDTECH 541: Integrating Technology Into the Classroom Curriculum

When I was taking this class, I had a student in my technology class who had difficulty seeing. In working with his learning support teacher, we were able to purchase a large-letter keyboard for him to use. This piqued my curiosity to find other ways to help him see better using the options on the computer. No student should have to struggle to learn. I created a presentation for our learning support teachers sharing some multiple options for students to help them learn in technology should we encounter students with any disability.

After this class, I encountered another student with limited mobility. This project helped me pick out the right mouse for him to be successful. He uses the mouse with the large-letter keyboard and is able to participate in projects just like the rest of his classmates. This project did not just touch on hardware for students with disabilities, however, I worked in software and iPad apps that would be appropriate for cognitive, physical, and sensory disabled students, as well as at-risk and exceptional students.

I learned a lot through this particular artifact about how I can help every student, whether disabled or advanced. It is important to individualize learning, but it can be difficult to accomplish. This presentation is another set of resources that I can use to help those students.

STANDARD 5: RESEARCH

Indicators:

1. **Theoretical Foundations** - Candidates demonstrate foundational knowledge of the contribution of research to the past and current theory of educational communications and technology. (p. 242)

#Connectivism Meets #Constructionism

EDTECH 504: Theoretical Foundations of Educational Technology

In one of the first papers on learning theories I have written since my undergrad, I seek to explore the principles of Connectivism and Constructionism and their relationship with 21st century learning. 21st century learning invokes an image of technologies in the classrooms. Connectivism is a learning theory that is difficult to grasp without the use of technologies. When students connect to the world around them, they become stronger social learners. Constructivists learn by doing or making. When they share their creations with the outside world, they have the potential to get feedback. This feedback is crucial in connectivism, as it allows the makers to learn from failure or find encouragement to be better.

From my earliest psychology class, I have been enamored with the constructivist and progressive attitudes towards teaching. Never has this been more relevant than when I started teaching in my current position, which is an elementary technology teacher. It is our responsibility to connect students to the world, but also have discussions on internet safety. These discussions, however, are not something that should be solely our responsibility as technology teachers, however, since the majority of research and activity is done outside of our class. Every teacher should be willing to have these conversations with students so that they can connect safely in an online environment and receive feedback for the things that they make. This artifact may have forced me to increase my disdain for teachers who are not willing to connect themselves, let alone teach their students for a future we cannot predict.

2. **Method** - Candidates apply research methodologies to solve problems and enhance practice. (p. 243)

Instructional Software for 5th Grade Social Studies

EDTECH 541: Integrating Technology Into the Classroom Curriculum

My grandfather was a history buff, and it did not matter what type of history; American, European, even baseball history was important to him. From conversations with him when I was younger, I developed that same passion, going so far as to take courses in the history of Czarist Russia. I taught social studies at the middle school level twice; ancient civilizations became my passion. This artifact led me to something that I wish that I had more time to help nurture and develop. This artifact, created in Prezi, lists several types of software to help students learn social studies. I do not think that any software, however, could be as important and game-changing as Minecraft. This program could help gamify the 5th grade social studies curriculum.

Huang and Soman (2013) state, "In today's digital generation gamification has become a popular tactic to encourage specific behaviours, and increase motivation and engagement." Teachers have come a long way from running a PowerPoint version of Jeopardy on their SMARTboards. Teachers hold competitions between groups of students to see who can turn all of their homework in, and even learning management software has added badges to show student achievement. Minecraft, and more specifically, MinecraftEDU is a virtual world in which teachers can set parameters for student engagement. Students can work individually or with friends to solve problems and create structures. The 5th grade social studies curriculum in our school teaches about early English settlers. What better way to teach kids about what these settlers had to endure than by putting them inside a game and replicating the same scenarios.

This artifact has seriously led me to research implementing this, however, there is no buy-in from current teachers.

3. **Assessing/Evaluating** - Candidates apply formal inquiry strategies in assessing and evaluating processes and resources for learning and performance. (p. 203)5.1 Problem Analysis

Maturity Benchmarks Survey

EDTECH 501: Intro to Educational Technology

It has been an eye-opening experience looking back on some of my artifacts from this program. This artifact allowed me to analyze the maturity of our technology use within my district. This evaluation was done almost two years ago, however, in some respects, not much has changed. I shared this with my building principal to gauge reaction and he actually agreed with me on most of it, that it was not where it needed to be.

It is important to recognize where we are in our daily use of technology so that we may strive to do better. When we as educators are able to harness the power of technology, our students will be able to learn in a true 21st century environment. The problem occurs when too many teachers either refuse to analyze themselves or are aware of their issues but just, "do not have the time," to change. A maturity benchmarks survey like this one is something that should be done across our buildings to help determine areas of need and areas that could be used as training tools.

This benchmarks survey was based on the *Technology Use Plan Primer* by Peter H.R. Sibley and Chip Kimball. Even though I only analyzed one of the buildings that I teach at (under a fictitious name), the results can be shared and replicated at the other buildings. Seeing these results also makes me want to work harder to help teachers change the way they interact with technology and their students. I want

them to overcome their reluctance and stop making excuses to not engage their students using 21st century techniques, and I continue to strive to help them.

4. **Ethics** - Candidates conduct research and practice using accepted professional (p. 296) and institutional (p. 297) guidelines and procedures.

Annotated Bibliography

EDTECH 501: Intro to Educational Technology

One of the things that I was not looking forward to when I started graduate school was the amount of writing that I knew I was going to have to do. On top of that, I was nervous about making sure that my research and citing skills were not going to be sufficient. I am still not confident that these skills are up to par, however this particular artifact proves that I am able to research, locate, and cite resources to craft a professional paper.

In this artifact, I had to summarize lessons that incorporated technology, assess them, and reflect upon them. I had to cite each source in APA format, something I was not used to, since elementary and middle school uses MLA. By using sources such as Google Scholar, Bibme.org, and the *Publication Manual of the American Psychological Association, Sixth Edition*, I was able to have help in citing sources properly.

While I know that I have a lot of work to do before I become a professional writer, the courses here at Boise State University have certainly helped me discover new ways to research. Being able to link into the Albertsons Library via Google was a tremendous advantage to finding the right resources for what I needed. I still have a dream of submitting a paper to be published because I have all of these ideas that are constantly running around my head, and I know that I have taken the right steps to help fulfill that dream.

Conclusion

The Association for Educational Communications and Technology defines educational technology as, "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (AECT Standards, 2012 Version). Boise State has helped me redefine my vision of educational technology and helped position me for a future as an integration specialist. I believe that the projects that I have created reflect my personality and my passion for teaching, while adhering to the AECT Standards. In a digital world, where we are teaching students for careers that do not yet exist, our goals should continue to be to expose students to multiple forms of technologies while creating a social learning environment, enabling students to collaborate and problem-solve for the unknown future. An effective teacher will strive to meet these goals, and Boise State has helped me become a more effective teacher.

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