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Media Specialists and Gaming

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Media Specialists and Gaming

by

Angela Yanke

A Portfolio

Submitted to the Graduate Faculty of

St. Cloud State University

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Chapter 1: Introduction

As newborns, all the way to school aged children, we learn through the act of play (Powell, 2013). It only makes sense in school we can continue to use this mode of learning. Media specialists, by the nature of their position in K-12 schools are able to help introduce, and bring to the students and teachers, new materials and new teaching styles. While collaborating with teachers, media specialists can help fine-tune a lesson with new resources. They can help make a simple lecture into a fun, memorable learning experience.

As indicated by Powell (2013), research has shown play is a vital part of a child's education. One form of play can involve media specialists introducing the idea of gaming in education to both the teachers and the students. As technology grows and plays a larger role in education, the use of video games becomes more popular and easier to take advantage of. When searching for games, one will find there are a plethora of types and formats from which to choose. Board games and card games are the oldest recorded games (Manusos, Bugsby, & Clark, 2013). Multiplayer, roleplaying, co-op, strategy-based and physically active games are other examples that can be used to teach in education.

The focus of this portfolio will be to examine types of games that can be integrated into the learning environment. Three examples of games that a media specialist can either help implement in the media center or use in collaboration with teachers in the classroom will be included. The first game will provide a way for students to do extra practice and will help teachers with differentiated instruction. The second game will be a puzzle game that can be used in almost any subject area and will help with formative assessment or the introduction of a new lesson. The third game will promote reading with the use of a competitive game for an entire

grade level or school, based on a well-known board game. The media specialist, as part of the role of the teacher as to help enhance education through all grade levels in the American School system, is in an excellent position to introduce the types of games found in this portfolio.

Background

Games have been used in education throughout history (Manusos et al., 2013). In the 1990s, when I was in school, computer games and traditional board games, such as Number Muncher and Oregon Trail were being experimented with. In math class, we used card games like cribbage to help practice addition and work on critical thinking. As technology develops, new games are being invented and new ways to play games are being created.

In schools, the media center's role and the media specialist's role is changing. Traditionally, the role of the library and librarian was viewed as one to house books and help students check them in and out. As society has changed, this role has come to include collaboration with teachers and integration of technology. The American Library Association (2016) states, in the job description for a school librarian, that they should be "a collaborator, change agent, and leader" (p. 1). A media specialist in a school, who takes on these roles, is able to introduce new ideas and resources to classroom teachers. While media specialists adapted to fit what society and education needed so did the library, now more often called the media center. This change in label reflects the changes the media specialist's have made to change the media center. The media center has adapted to become not only a place of literature, but also of the 4Cs: critical thinking, communication, collaboration, and creativity. These 4 Cs are referred to as 21st Century skills (National Education Association, 2016). Media specialist's have even started to add areas called makerspaces to their media centers to let kids explore and work on the 4Cs

(Bowler, 2014). As the media specialist and media center adapt to fit societies needs, they have become an ideal place to explore and experiment with new materials and teaching styles.

Purpose

The purpose of this portfolio is to provide three games that a media specialist can use to help bring play to education and to enhance a student's education. The media center should be an ever adapting environment and a place to provide students and teachers with new materials and ideas that fit their needs. Media Specialists have already been in the process of adding play to help enhance education by the addition of the makerspace to many media centers. Nancy Sardone and Roberta Devilin-Scherer (2010) stated, "In the past few years, there has been an increase in attention to digital games in schools to improve learning" (p. 409). Media specialists are in an excellent position to introduce digital games and collaborate with other educators and while doing this add more play to a testing and standard focused curriculum. The research in this portfolio will look to see how play and games are affecting education and what types of games are being used in the Media Center and in classrooms. This information will be used to inform the creation of three games a media specialist can use to enhance a child's experience and education in the school. The first game, developed by myself, will provide students with fun and educational materials that can be used in and outside the classroom and help teachers differentiate instruction for their students. The second game, also developed by myself, will motivate and encourage students to read for enjoyment. The third project provides materials to integrate an existing game that teachers can use in any subject's curriculum as a form of formative assessment and to help students work on the 4Cs.

Significance of Study

This portfolio is designed to help media specialists incorporate gaming into their media centers and schools. Studies have shown games can expose students to more sources of information, get them thinking, increase their confidence, and get them caring and thinking about real world-issues (Markey, Leeder, & Rieh, 2012; Sardone & Devilin-Scherer 2010). Games can also be used to increase motivation to learn (Codish & Ravid, 2014). Choosing the games to use can be a daunting task with the large number of options available. It is important when choosing the right game that the game is fun, interesting, and can help improve a students' learning experiences. When well-chosen games can be valuable tools for learners.

Definition of Terms

Active Video Games—active gaming “calls for participants to take part in digital and other technology-based games where they are engaged in physical movement in order to play the game (Witherspoon Hansen, & Sanders, 2011).

Board Game—Any game played on a board, especially one that involves the movement of pieces on the board, such as chess or checkers (Oxford Dictionary, 2017).

Card Game—a game in which playing cards are used (Oxford Dictionary, 2017).

Co-op Games—aka cooperative game is a game where groups of players ("coalitions") may enforce cooperative behavior; hence the game is a competition between *coalitions* of players, rather than between individual players (Wikipedia, 2016).

Game Based Learning—games that provide students with an educational objective that is achieved through the game play (Codish & Ravid, 2014).

Game play (aka mechanics)—the relationship that exists between all aspects of the game and the players (Manusos et al., 2013).

Gamification (aka gamify)—the use of game design elements in non-game contexts such as, but not limited to, workplaces (Codish & Ravid, 2014).

Makerspace—a place, most commonly found in libraries, where informal, collaborative learning can happen through hands-on creation, using any combination of technology, industrial arts, and fine arts (Bowler, 2014).

Multiplayer Game—a computer game designed for or involving several players (Oxford Dictionary, 2017).

Roleplaying Game—is a game in which players assume the roles of characters in a fictional setting (Wikipedia, 2016).

Video Game—a game played by electronically manipulating images produced by a computer program on a television screen or other display screen (Oxford Dictionary, 2017).

Chapter 2: Review of Literature

Introduction

The use of games in education is not a new idea or practice. Even during my childhood education, we played games during school, but it was a rare occasion. The games we played were not very well integrated into the curriculum and were more as a reward than a learning experience. Since it is a major role of media specialists to help teachers integrate new resources into classrooms and to determine which resources are most appropriate for a particular situation, media specialists are in an excellent position to assist teachers with integrating games into their curriculum (American Library Association, 2016).

The purpose of this literature review is to examine studies that can help show the impact games can have in education. The review will also look at the types of games available, their success in being integrated into the curriculum, and their advantages and limitations.

Methodology for Literature Review

When searching for literature to use in this review I used mainly Ebsco's ERIC and Academic Search Premier. I initiated the search with terms including gaming, education, library, video games, makerspace, gamification, media center, active learning and school libraries. I looked for studies that had a large sample field. A large sample field means that the study surveyed or researched a large group of different people. This large sample field can help avoid discrimination, biased viewpoints, and human error that could have an effect on the results. In my quest to find the least biased sources possible, I avoided studies that were conducted and influenced by game manufactures. I was primarily interested in the studies that examined how games helped, or did not help, enhance a lesson.

Play in Education

The discussion of the importance of play in education seems to stem often from the research of Piaget and Vygotsky. In Piaget's view, the form of play and the developmental sequence in which play unfolds are universal (Piaget, 1967). Piaget and Vygotsky focused on the educational theory of constructivism. Constructivists believe children learn by actively interacting with the environment (Bhattacharya & Han, 2001). Vygotsky takes it a step further and introduced the ZPD or the Zone of Proximal Development. Vygotsky's "Mind in Society" (1978), describes ZPD as the difference between a child's "actual development level as determined by independent problem solving" and the "potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 79). Wagner states "Vygotsky viewed play as a probable circumstance for the construction of the ZPD, the theory underlining this construct, as well as its relationship to play and child development" (2000, p. 1). Vygotsky believed strongly that play was the primary method by which children learn.

Children begin playing in infancy even before they can crawl. Once they can crawl they will adventure anywhere in search of objects to explore and play with. For infants and toddlers, between ages 1-3 years old, play is more of a solitary activity in which they discover and explore their world. Once children have reached preschool age, between 3-4 years old, play has started to become more of a social activity. Annmarie Powell (2013) discussed the evidence of how play is a vital part of a child's development. She writes, "Children learn many different kinds of skills from play, including turn-taking, sharing, and strategy. Evidence suggests play also may have important implications for a child's development of emotional competence skills" (p. 836). She

goes on to explain play can also help teach self-regulation, emotions, other's perspectives, and peer relationship skills.

Even though several researchers have shown that play is important in a child's learning, others have found that play becomes less important in school education (Powell, 2013). Research shows play can easily be adapted to the media center environment. Powell makes a strong case for the connection between literature and play in her paper. In particular, Powell points out the strong connection between literature, video games and make-believe play. Welsch (2008) quotes a study by Heath (1982) on this topic saying, "Research indicates play around stories may encourage the development of critical comprehension skills while simultaneously developing students' love of stories and their ability to connect with books on a personal level" (p. 138). Literature and storytelling are already a common part of media center programs and this can be logically extended to play and games.

Recently, many media specialists have started to implement the use of play through the introduction of makerspaces. The makerspace has become a popular addition to many media centers to help promote STEM (Science, technology, engineering, mathematics) and 21st century skills (Bowler, 2014). Makerspaces often include a variety of activities that encourage play like inventive electronics, robots, circuit bending, duct tape, Minecraft, and cooking (Graves, 2014).

Games in Education

Games are a type of play. They can provide motivation and excitement (Codish & Ravid, 2014). Lisk, Kaplanali, and Riggio (2012) state, "Games have an impact on players' motivation due to their uncertain outcome and the focus on a goal, providing a sense of challenge for players" (p. 137). Games are also easy to incorporate into education. Judy Willis (2011), a

neurologist, helps explain how gaming enhances education. She states, “Games insert players at their achievable challenge level and reward player effort and practice with acknowledgement of incremental goal progress, not just final product. The fuel for this process is the pleasure experience related to the release of dopamine” (p. 1). In other words, players are receiving immediate feedback or consequences while playing games, which causes them enjoyment.

When discussing games in education, Annmarie Powell (2013) believes that using games to gap the bridge between play and literacy has helped encourage creative thinking and cognitive development in an entertaining way. When looking at the statistics for the use of games in media centers Nicholson (2008) found that 30% of media centers in schools, circulated games of some type. The most commonly circulated types of games were board games and card games. Around 51% of school media centers let children play web-based games. Finally, Nicholson learned, from those that had gaming programs in their media centers, 50% of the games involved some range of competition, for example beating a time or other students. However, the survey also found that 20% of media centers had a policy against gaming in the library. So, not only did these media centers not use games to educate, they actively prevented gaming in their centers (Nicholson, 2008).

Traditional board games and game strategies have been around for thousands of years and were even being used to teach way before the traditional classroom. An example would be thousands of years ago hunting games were used to teach kids strategy and survival skills. These games were used to help teach students “through their multiple intelligences: learning through sight, touch, and sound” (Manusos et al., 2013, p. 8). Board games can be fun and remain useful in educational settings today. As technology grows though, studies find that children tend to also

enjoy playing video games. The video game industry is a popular and growing industry. In fact, the Entertainment Software Industry found in their 2016 usage report that, in 2015, 63% of American households have at least one person who plays video games regularly, which mean 3 or more hours weekly (2016, p. 2). When explaining the growth of video games, Lisk et al. (2012) state that video games “are virtually risk-free environments that encourage exploration and trial-and-error actions with instant feedback and therefore stimulate curiosity, discovery learning, and perseverance. Triggered by immediate feedback, simultaneous learning on multiple levels can be expected through games” (p. 138). Although traditional board games can be as valuable in education, video games seem to be the preference of many young people right now.

There are many types of video games. Multiplayer online games are described as a computer game designed for or involving several players (Oxford Dictionary, 2017). These games provide, both within education and outside education, great opportunities to learn leadership and teambuilding skills (Lisk et al., 2012). Another new genre of video games, and games that are starting to be used in education, is one referred to as active video games. Lisa Witherspoon Hansen and Stephen W. Sanders (2011) describe active gaming as games that, “call for participants to take part in digital and other technology-based games where they are engaged in physical movement in order to play the game. Participants use their bodies as the controllers while increasing heart rate and burning calories” (p. 124). Some examples of active video games include all games for systems like the Xbox Kinect, Nintendo Wii, and certain Virtual Reality games. Active gaming is not only appealing because it involves physical exercise. A study from the Journal of Educational Research (Mellecker, Witherspoon, & Watterson, 2013) showed a significant increase in test results when teachers used an active game called “Footgaming” to

help teach nutrition in the classroom. This study was conducted in an elementary school, using third to fifth grade students as the participants. The results showed an improvement of the average test scores as shown in Table 1.

Table 1

Pre and Posttest Average of Footgaming (Mellecker et al., 2013)

Grade	n	Pretests average	Posttest average
Grade 3	15	17.8	26.73
Grade 4	26	20.92	26.54
Grade 5	16	16.19	28.13
Total	57	20.14*	27.04*

* $p < 0.001$.

During the study, researchers had the students keep a journal and found that the students thoroughly enjoyed footgaming (Mellecker et al., 2013). Lisa Witherspoon Hansen and Stephen W. Sanders (2011) suggest, “active gaming should be promoted as one of many activities children could participate in daily in order to live healthy physically active lifestyles” (p. 1).

Video games are becoming easier to use in the classroom as the needed technology is becoming more mobile and available. Video games can now be played on computers, mobile devices, or TVs and consoles. Neurologist Judy Willis states, “The popularity of video games is not the enemy of education, but rather a model for best teaching strategies” (p. 1). Some media centers are embracing this teaching strategy. One media center created their own video game

called BiblioBouts to help teach library skills. They discovered that the BiblioBouts game exposed students to more sources, increased their confidence, and introduced them to a wider range of professional sources. (Markey et al., 2012).

Another popular way to bring gaming into education is through gamification. Gamification is the use of game design elements in non-game contexts such as, but not limited to, workplaces and schools (Codish & Ravid, 2014). Codish and Ravid (2014) explain in their article that in education the most common mechanics used in gamification are points, badges, and leaderboards. For example, a teacher may award a student badges for having accomplished extra educational tasks throughout a lesson or school year. They explain that gamification is often used to increase student motivation to attend class, finish materials, participate in discussions, and complete extra assignments. Codish and Ravid (2014) was performed with college students to test the relationship between perceived playfulness and game mechanics. It was concluded that even at the college level, game mechanics increased playfulness and enjoyment of a lesson but that different game mechanics tend to reach different students. Codish and Ravid discovered that introverts tended to like leader boards and points but extroverts did not. Similarly, external rewards were enjoyed more by extroverts than introverts. Codish and Ravid concluded “ To achieve overall increased playfulness, a correct combination of mechanics should be used and, if needed, changed throughout the course, to ensure success.”

As previously mentioned, research is showing that games tend to have positive effects when implemented into education. However it takes time and guidance for a teacher to become confident enough to implement games into instruction (Sardone & Devlin-Scherer, 2010). They state that often “...undergraduate teacher education programs require only one technology

course, which tends to be narrowly focused and standardized. Within these constraints, it is difficult for teacher candidates to learn to lead a digital game, design lessons for students using game-based technology, and determine best practices for this learning technique” (p. 410).

Contrary to content area teachers, it is a media specialist’s job to introduce and collaborate with other teachers to help enhance the curriculum (American Library Association, 2016). AASL, the American Association of School Librarians, states it is a school librarian’s job to “introduce children and young adults to literature and other resources to broaden their horizons” (American Library Association, 2016, p. 1). ALA states collaboration as a media specialist can truly enhance the educational experience if they collaborate with others to help introduce and provide new resources and strategies (Church, 2008). If gaming can help provide as Judy Willis (2011) states, “a model for best teaching strategies,” then it should be part of the media specialist’s job to collaborate with teachers and bring play and gaming into schools.

Summary

Play is shown to be an important part of learning experiences from infancy to adulthood. However, once children reach school age, research shows that play is being taken out of the educational experience (Powell, 2013). Many media specialists have already started the process of bringing play back to education by introducing the Makerspace, a play and education area, which also supports STEM and 21st Century Skills (Bowler, 2014). Part of a media specialist’s job is to provide best learning practices and to collaborate with teachers (American Library Association, 2016). This makes media specialists ideal candidates to help teachers use game based learning and gamification within their classrooms and media centers. Traditional board games have been and continue to be a well-used tool for teaching; however, students show a

preference for video games (NCES, 2003). Video games help provide a number of other benefits than just play in education. For example video games can provide physical activity when using active game play (Witherspoon Hansen & Sanders, 2011). Through multiplayer games, students have the potential to learn teamwork and leadership skills (Lisk et al., 2012). Gamification is another way teachers are adding the playfulness of games to education, and seeing positive results, from preschool to higher education (Codish & Ravid, 2014). Game based learning can help bridge the gap of play and learning in education.

Chapter 3: Gaming Project Descriptions

Introduction

The theme of this portfolio is to provide opportunities for media specialists to integrate gaming into school media centers and classrooms to enhance student learning. Play has been shown to be an important part of learning (Powell, 2013). Integration of gaming into education can help bring this natural part of learning back into our schools. The media specialist is in an ideal position to further the use of games into education.

A description of each project can be found below.

Project #1—A to Z Media Center Challenge

The A to Z Media Center Challenge is a game students can play on their own free time either in or outside school. There is a set of tasks for each letter of the alphabet. Students are able to complete a task and earn a badge from the media specialist. Each letter of the alphabet has a set of options the students can pick and the tasks range in the types of activities. Some tasks involve something they recently learned in class. For example, a student must create a book trailer for the letter B about a book they recently read in English class. Another task may be to read a book that meets certain requirements for genre, reading level, content matter, or author. For instance, the theme for the letter D is Diversity and the students must read a book with a main character who is different from themselves. Other tasks include challenges and puzzles, or even students attending an event in the community. Students continue to earn badges and complete tasks until they have completed a task for each letter of the alphabet. Once they have completed the whole alphabet they have completed the challenge. This game is optional for students to participate in. As an incentive to get students to participate, I have created fun

rewards for completing each letter of the alphabet and then gave a large prize to the students who finished the entire challenge. I created fun stickers for each letter of the alphabet and planned an ice cream party for the last week of school that all students who finished the challenge were able to participate in.

Goals and objectives. The goal of this project was to provide students with extra challenges and opportunities to use the skills they learned throughout the school year both inside and outside the classroom. This game also provides an opportunity for the media specialist to collaborate with the teachers. The media specialist works with the teachers to create extra activities that enhance the mastery of subject standards. This game also helps the teachers with differentiated instruction. For example, if a student has mastered a certain lesson but some students still need extra practice, that teacher will be able to collaborate with the media specialist to add an A to Z letter activity for the students who have mastered the lesson. The goal is for the lettered task to be more focused on a project or creation that shows their mastery of the content. The student then received a sticker for that letter helping them get closer to achieving the alphabet.

Target audience. I worked specifically with a middle school, grades 6-8, when I created this project. However, this game idea would be able to be used at any grade level K-12. The material can be readjusted and adapted to fit lower or higher-grade levels. It was best when creating the game to get input from subject area teachers on ideas so that the material related to what the students were talking about in the classroom.

Project #2—Mystery in the Media Center

Mystery in the Media Center is a game the media specialist ran from the media center with the help of the classroom teachers. This game used techniques and ideas from the traditional board game of Clue. The purpose of this game was to help promote reading. The media specialist introduced, through a video shown to the English classes that choose to participate that there had been a theft in the media center. For example, a bookshelf was missing. The media specialist introduced many different suspects and possible locations of the missing bookshelf. Students then read mystery books and filled out a small book review to earn clues for their class. The classes then competed against each other to solve the mystery. Each week, the media specialist added up how many clues were earned for each class and presented them to the teacher. Like in the game of Clue, the teacher then crossed off suspects and locations as the clues were presented to the class. So for example, if student A read a mystery book and filled out a review, then student A's class earned one clue from that submitted book review. The class was able to cross off a suspect or location from this clue. If more students read and submitted book reviews they had multiple clues to cross off for the week and were closer to getting the right answer. Each week, after the clues had been earned, the class was able to make one guess of the suspect and location until there was a winner. The winning class was rewarded with a mystery movie and pizza party.

Goals and objectives. The goal of this project was to create a game that would get students engaged in reading. The game also introduces students to the specific genre of mystery literature.

Target audience. The audience for this project was English classes in the middle school grades of 6th, 7th, and 8th. However, this game would be appropriate for grades 1st-12th in all subject areas. The game can always be adapted, so students would have to read a different genre or even certain nonfiction books. The main gaming mechanics could also be changed to fit other goals and objectives in different subject areas as well.

Project #3—Breakout EDU Introduction

Breakout EDU is an educational version of the popular adult puzzle/escape rooms. The company website of Breakout EDU states, “Breakout EDU games teach critical thinking, teamwork, complex problem solving, and can be used in all content areas” (Sanders, 2016). On Breakout EDU’s website there are many different games to pick from. The games range in subject area, group size, and age range. There are games available for ages elementary through adult. A Breakout Edu kit comes with a box and many different types of locks. Each game consists of a scenario in which a group or class is aiming to find clues and solve puzzles with the goal of getting inside the box. This is often times done within a certain time limit. For this project, I worked on creating a set of activities to help introduce and initiate Breakout Edu into a school and finally a Breakout Edu game that can be used in the Media Center for Orientation at the beginning of the year. The plan starts out with a Breakout Edu tournament that teachers and staff are able to participate in. Then I presented a few scenarios in which Breakout Edu can be brought into the classroom or used as a form of enrichment during a Response to Intervention time. Finally, I provided my own Breakout Edu game written as an orientation to the Media Center at the beginning of the school year.

Goals and objectives. The goal of this project was to help initiate Breakout Edu into the school. Breakout Edu helps strengthen the education in a school in many different ways, for both the students and teachers. Students are able to work on their creativity, collaboration, and critical thinking skills while playing the game and eventually through the creation of their own Breakout Edu games. Breakout Edu is also used as a type of formative assessment, the students will need to think back to past lessons and what they have learned to break into the box or to create their own game. Breakout Edu is also able to assist the staff with building a community. While playing in the tournament, teachers not only get to experience Breakout Edu and think about how they can use it in their classroom, but they are also able to work as coworkers on their collaboration, communication, and teamwork skills through a fun challenging game.

Target audience. The materials I created are aimed for a middle/high school, grades 6-12. Breakout Edu can also be used in any class and any subject area. Games are easily manipulated and changed to fit any type of class and all different skill levels.

Summary

The Media Specialist is the perfect person to introduce gaming in education because of the specific role of collaboration and instruction. Research has shown games can enhance the educational experience and can be a great motivator for students. As collaborators media specialists have an ideal opportunity to help introduce and integrate certain games into the curriculum. My three projects expose media specialists to three very different types of games. Each game is aimed at different audiences, played in very different ways, reaches different types of students, and are used to accomplish many different tasks.

Chapter 4: Purpose of Portfolio

The purpose of this portfolio is to provide opportunities to increase the use of play in education through games. The first and second project are games that were developed and implemented in a middle school of 6th, 7th, and 8th graders. The third project provides materials to introduce the game Breakout EDU to administrators and staff, and an example of the game created by the author to facilitate student orientation to the media center. This project was implemented in a middle/high school, which are grades 6th- 12th.

Project #1—A to Z Challenge

Description of the game. The A to Z Challenge was created to reward and motivate students for going above and beyond their normal class lessons and homework in any curriculum area. The game is designed as something the students can play during their free time either in or outside school. This game has two tasks for each letter of the alphabet and the students can pick one of the two to earn the letter. Each task is a different type of activity the student is able to pick to complete. A task may involve something they recently learned in class. For example, in 6th grade social studies students learn about the state symbols. For the letter G, one possible task is for the students to look up the state gemstone and create a promotional advertisement announcing what and why this is the state rock. Here are the instructions from the document:



G is for Gemstone.

Research Minnesota's official gemstone. What is it called? When was it designated? What does it look like? Where is it found? Create a short promotional advertisement announcing and explaining why this is the state gemstone. You may use any type of presentation format (examples- commercial, poster, slideshow, song, etc...).

Another task, for a specific letter, may be to read a book that meets certain requirements for genre, reading level, content matter, or author in the classroom. Other tasks could include challenges and puzzles, or even attending an event in the community. For example, an activity for O could be “organization”, for which the students must find a specific organization that they would be eligible to do volunteer work for and then participate in the volunteer work. As students complete activities, they show them to their teacher and the media specialist and are rewarded with different buttons or stickers for each letter of the alphabet. If a student does not like either activity for a certain letter, they have the option of skipping that letter. One time during the challenge a student may chose to do both the activities of a single letter to skip the disliked activities of another letter. For example, a student does not like the activities for letter B but really likes both the activities for letter N. Instead of completing any activities for B, they decide to complete both the activities for N and none in B, still successfully completing the challenge. Once a student has completed a task for each letter of the alphabet or used the above

method to skip a letter, they have completed the challenge. At the end of the semester, the school may hold an ice cream party in which the students who have completed the challenge can celebrate their accomplishment with ice cream and fun activities.

Implementation of the game. To implement the A to Z Challenge, the media specialist creates at least two activities for each letter of the alphabet. These activities are most useful to the students and teachers if they are designed from lessons and curriculum materials students are using in the classroom. This provides an opportunity for the media specialist to collaborate with classroom teachers to collect activity ideas and to become more familiar with the class curriculum. Collaborating also allows the teachers to become aware of and involved in the game. This prompts them to promote the game and encourage students who have completed class projects to then look at the A to Z challenge in their spare time. An example of the A to Z challenge used by the author is included in the digital materials linked below. It will need to be adapted to fit the needs of other students and teachers. The A to Z list should be displayed in an easy to access location for students, both in the classroom and at home. One suggestion is to locate the game on the media center website or another place online that students and teachers can easily access. If students do not have reliable access to devices or the Internet, posters for the classrooms or paper copies for the students can be created.

The next step is for the media specialist to create, print out, or purchase prize buttons or stickers to be ready when students complete challenges. A document of helpful resources to create or purchase buttons or stickers can be found in the included resources. These prizes can be changed but should be something of which the students can be proud of earning and can show off. Students need to be aware of the prizes for each letter and excited to receive them. In order

to accomplish this the buttons or stickers should be purchased or created with the help and advice of the students. Next, the media specialist presents the challenge to the students. The presentation should be presented during media center orientation or another event at the start of the school year. When presenting, show the students the A to Z Challenge, the rewards, and describe how and when students can play the game. Finally, the media specialist needs to promote the challenge throughout the semester. One way of doing this is to remind teachers of the A to Z activities that relate to class lessons. Another strategy is to talk to students as they check out books, conduct research in the media center or simply discuss their out of school activities.

Included materials. Digital copies of the following materials can be found in this [Google Drive Folder](#).

- A to Z Challenge game- written specifically for Zimmerman Middle School in Zimmerman, Minnesota
- Resources for reward buttons or stickers

Project #2—Mystery in the Media Center

Description of the game. The Mystery in the Media Center game was developed to promote reading, particularly of the mystery genre. For this game, the media specialist collaborates with English teachers to create a mystery consisting of a missing bookshelf and books. The students compete against other English classes to first solve who took the books and bookshelf, which books were taken, and where the books and bookshelf are being hidden. The class works together to solve the puzzle of which books were taken using a provided list of the suspects' names. Then, the students individually read mystery books to collectively earn clues for their classes. After reading a book they complete a small book review, which earns them a

clue for their class. These clues provide suspects and locations, which can be crossed off the list and eliminated. The clues earned for the week are delivered on Fridays, and as a class students make one guess using their earned clues. The game continues each week with students earning clues and each class getting one guess until a correct answer is found. The winning class receives a pizza party or other suitable prize.

Implementation of the game. Prior to implementation of this game, the media specialist needs to have an adequate mystery collection for students to read. The media specialist puts this genre on display or in a place that will be easy for the students to access them. The next step is talking to the teachers and making sure they want to participate in the game. If they agree to participate, the media specialist takes their picture to be included in the list of suspects in an introduction video. Next, the media specialist discusses with the teachers how they want the students to demonstrate that they have read a book for the game. In my game, I had the students fill out a brief book review using Google Forms.

Once the teachers have agreed and the book review form is ready it is time to set up the “crime scene” in the media center. This is best to do after school when students are not around. To create a crime scene, remove a bookshelf and put all the books aside. Use masking tape to make the outline of the bookshelf on the floor and place crime scene tape around the location. Finally, over a one-week period the media specialist meet with each English class to introduce the game. As the first step, play the introductory video to set up the scenario for the students. In my scenario I set myself up as a member of a secret teacher book club in which we all came together to discuss our favorite books. However, after the last meeting of the club I had gone to my office to take care of a few things and discovered that someone had stolen the bookshelf and

had taken a copy of each book club member's favorite book. I asked the students to help me figure out: who took the bookshelf and books; which books were taken; and where the books and bookshelf had been hidden. I have included my video for reference and a script of the scenario that can be found in the Google Drive link below in the included materials section.

Next, present the students with the pictures and names of all the suspects, who are the teachers dressed in funny outfits and given funny names. The media specialist explains that to find the titles of the missing books the students need to work as a class and use the names of the suspects. Explain that each teacher's secret codename is based off his or her favorite author, book character, or book name and that these are the books that were taken. In each case, the teacher possibly changed or removed one letter from the first and/or last name. For example, one of the names could be Tanker Belt. In this case, the I in Tinker changed to an A and the second L in Bell changed to a T. The character is Tinker Bell, which means the book that was taken was Peter Pan. Next, present to the students the locations that the bookshelf could be. I had 12 possible locations in my game. Examples of some of these locations would be principal office, cafeteria, teacher's lounge, and so on. Next, explain to the students how they can earn clues by reading mystery books and making guesses as a class. For my game, the students filled out an online book review created in Google Forms. The students could also use some other program like Accelerated Reader to verify that they have read the book. After the introduction, students are free to check out mystery books.

The rest of the game takes place in the classroom with the teachers. Present to each teacher a list that they display in their classroom of all the suspects and possible locations for the missing books. Then distribute an electronic list to the teachers for each of their classes. The

teachers can use this list to cross off suspects and locations as each individual class earns clues. A picture of the poster and a copy of the electronic list for each class are included in the resource materials found at the end of this section.

When all classes are ready to play and the students have started reading, the media specialist has some work to do behind the scenes. First, they must pick who the thief is and what the location of the missing books is. Next, they place the clues in order so that all classes receive the clues in the same sequence. For clues 1-3 the students earn suspects, for clues 4 and 5 they earn locations, for clues 6-8 they earn suspects again and then back to locations for 9 and 10 and so on. This will make it less likely for a class to randomly guess correctly early in the game. It is also important that each class receives the clues in the same order. This helps prevent cheating and sharing of information. Every Friday the media specialist prepares the clues that have been earned for each class and delivers them to the English teachers. The teachers then submit a guess for each class. The results should not be shared with the classes until Monday. This prevents students from sharing results with other classes later in the day. This continues until there is a winning class. That class then receives their reward such as a pizza party.

Included materials. Digital copies of the following materials can be found in this [Google Drive Folder](#).

- Mystery in the Media Center Breaking News Video
- Breaking news video script
- Mystery in the Media Center Suspect Slideshow
- Missing Books Answer Sheet
- Introduction to Mystery in the Media Center Slideshow

- Game sheet posters for classrooms
- Electronic game sheets for classrooms

Project #3—Breakout Edu

Description of the game. Breakout Edu is the educational version of an escape room. Materials can be found to help introduce and learn more about Breakout Edu at www.Breakoutedu.com. The website contains a great introduction video for teacher to use when introducing the game. The game revolves around a single box that is full of locks. Players hear the theme or scenario for the game, search the room, examine clues, and solve puzzles to figure out the combinations for the locks. The ultimate goal of the game is to get inside the box and gain the prize. There are many different scenarios to play in the games. For English classes, there are games themed on books that teachers may read in class or ideas found in literature. There are games for many subject areas including: English, science, social studies, math, physical education, and music. Any age level and any group size can play this game because it accommodates people from elementary age to adulthood and small groups to whole class sizes.

Breakout Edu often starts with a box in the center of the room with four to five locks on a hasp. The teacher provides the students with the scenario and time limit they have to try to open the box. The time limit given is typically thirty minutes to forty-five minutes. Once the timer is started the students must search the room for clues. Clues may be QR codes, web addresses, other boxes with locks, riddles, and more. The clues are different for each game and are based on the overall theme. Anytime the students are struggling, they can make use of two hint cards to be presented to the teacher for advice or help. Once the students open the box, the timer will be stopped and they receive the prize.

The Breakout Edu game I wrote is designed to be a media center orientation at the beginning of the year. The goal of the game is to review the rules and regulations of the media center. This game was specifically written for returning middle or high school students who have received media center orientation the previous year. Furthermore, the students should already be aware of the rules in the media center and Breakout Edu will help refresh their memory for the new school year.

Implementation of Breakout Edu. Breakout Edu provides a beginners kit of the necessary materials that can be purchased on its website. These kits provide all of the needed materials; however, it is very important to check to see if the creator has added any extra materials. The media specialist should then register to get access to all the games that Breakout Edu has published and the sandbox games that others have written. Registering is free and Breakout Edu has well over 200 games. The hardest part of Breakout Edu is helping teachers become aware of the games and ways to integrate them in the classrooms.

One way to implement the game is to hold a staff tournament. To begin the tournament, the media specialist introduces Breakout Edu to the administration so they are supportive of the product and the tournament. To introduce them to the game, I selected one of Breakout Edu's beginner games called "Dr. Johnson's Lab Zombie Apocalypse." This particular game has no specific content area and is for ages 13+. It is a challenging game, one in which students can be successful and helps paint a clear picture of how Breakout Edu works. With the administrator's approval, the media specialist can set up a Breakout Edu tournament for the staff. This tournament uses a bracket style line up. For example, the English teachers may be playing against the science teachers. The winner then plays against another bracket's winner until the last

two teams play a game against each other for the championship. The timer determines the winning team and most games have a 45-minute limit. When a team breaks into the box the clock is stopped. If team A still has 20 minutes left and team B has 15 minutes left on the clock then team A is the winner. I have included my school's bracket line up and a list of game suggestions that can be found at the end of this section. For each round all teams use the same game, with the winners of each round switching to another game for the next round until the final teams face off in round three. The games should be set up in the same room, or the same way in a similar room, to keep the competition fair. It is very important to follow up each game with questions and a period of time for participants to reflect on the game, particularly in the first round when you have everyone still playing in the tournament. I specifically liked having the teams grouped by subject area so that I could research beforehand what types of games have been created for each teacher's subject or curriculum. The media specialist also leads the discussion on how teachers could use the game in their classroom.

I have found a few different ways to implement Breakout Edu into the classroom. Some Breakout Edu games are written for a whole class to work on together. Often, these games have many different parts so that the class needs to break up into smaller groups to solve separate clues. Eventually, the groups come back together to join all the components as a whole and solve the game. A majority of Breakout Edu games are written for small groups. I have found two ways to play these particular games. The first way is to break the class into two groups and have each group play the same game at the same time. To do this you need to have two Breakout Edu kits and set them up on opposite sides of the room. The students then compete against each other to see which group can open the box first. The second way is to split the class in half and have

the media specialist direct one group to play the game the first day while the teacher gives a lesson. The next day, the media specialist and the teacher switch groups.. Both of these methods can be used to play a Breakout Edu game that enhances a lesson previously taught by the teacher or a lesson that will soon be introduced by the teacher.

Included materials. Digital copies of the following materials can be found in this [Google Drive Folder](#).

- Breakout Edu Teacher Tournament Bracket and game list
- Media Center Orientation Breakout Edu Game- Media Center Insanity
 - Media Center Insanity Set up Video
 - Media Center Insanity description sheet
 - Resources for Media Center Insanity

Chapter 5: Reflection of Implementation and Application

Introduction

This chapter is a reflection on the implementation and application of the three games included in this portfolio: A to Z challenge, Mystery in the Media Center, and Breakout Edu as well as the process of creating this portfolio. After reflecting on each project, I will discuss what could be added to each game and what my plans are for each project in the future.

Reflections

All three projects were implemented, or are in the process of being implemented, at Zimmerman Middle/High School in Zimmerman, Minnesota. Zimmerman Middle/High school houses grades 6-12th. As each game was introduced to the teacher and students, I learned a great deal about what worked, what did not, and what could be done to enhance the game. Here is my reflection and recommendations on each project.

Project #1—A to Z challenge. The A to Z Challenge uses the gamification technique of badges to motivate students to complete extra activities based on themes in curriculum materials. Students chose their own extra activities, reflected on classroom lessons as they completed the activities, and had an opportunity to be creative in completing the game. In addition they were rewarded by receiving buttons and a party. Of the three projects, the A to Z Challenge is the only one that I ran differently in my school from how it was described in the previous chapter. I originally created this game as a summer challenge instead of one to be played during the school year. I called it the A to Z Summer Challenge. The original plan was to use fun activities to encourage students during the summer to reflect on what they had learned at school the previous year. Zimmerman is a small city in which a large percentage of the middle school students do not

leave the town during the summer for more than a short period of time. Feedback from individual students suggested that they were searching for opportunities for meaningful activity during the summer. In the summer of 2015, I implemented a version of the A-Z challenge for students at Zimmerman Middle School. Several challenges implementing the game caused me to revise the program. That summer only five of about 600 students who started the game completed the challenge. Effective communication with the students was a challenge and there were few ways to clarify or answer questions or misconceptions that the participating students encountered. Although there was healthy interest to begin the game at the end of the school year, students reported in the fall that they largely forgot about the challenge over the course of the summer. I decided to use this game during the school year, instead of the summer, as it would allow me to interact with the students as they progress through the experience of the A-Z challenge. I would also be able to encourage students to become involved through daily interactions that are lacking during the summer months. Finally, it is much easier to produce challenges and opportunities that align with the curriculum offered in other classes when I could collaborate with colleagues during the school year. Challenges can be altered, updated, or even added in accordance with the needs of teachers to provide further learning opportunities for their students. I am planning on implementing the A to Z challenge, with the help of the teachers, at the beginning of next school year.

When reflecting on the A to Z challenge as a summer game, I realized that I learned some important tips from the students who participated. One observation I made was that I needed to be more specific on what I was expecting the students to create or give me as proof of an activity. Descriptions of some of the activities were vague. As a result, the products created by

the students were quickly put together with minimal thought. I realized if I wanted the students to create something meaningful as a result of the activity I needed to provide further structure and guidelines for expectations of them such as minimum page lengths or times. I also discovered that I wanted to have a place to present the artwork and creative activities I was receiving. Students had created projects worthy of display to the school community as assessments for prompts in this game. I found displaying the pieces very challenging without a dedicated area for their presentation. Finally, when creating the game for use during the academic year, I found I had the opportunity to work more closely with the teachers when planning the activities. When I first started the project, I struggled to come up with activities that correlated with certain letters. When I reached out to the teachers for advice and suggestions, I received a great deal of assistance that made it much easier to develop meaningful activities. I also found as I was planning for next year that the teachers were eager to be involved. They were excited to promote the game with their students and provide them with additional opportunities to work on the extra projects.

Project #2—Mystery in the media center. Mystery in the Media Center is a game that provides students with increased motivation to read mystery books. The addition of competition and a reward are intended to provide motivation to student's reading habits. The results were even more rewarding than I anticipated. The game was implemented in conjunction with all 6th, 7th, and 8th grade English teachers in Zimmerman Middle School. A total of eighteen classes and five teachers were involved in the game. Most teachers appreciated the game and made a concerted effort to encourage their students to participate. A minority of teachers did not fully commit to the game and made no extra effort to encourage their kids to participate. By the end of

the game, only two classes out of eighteen did not earn any clues. The same teacher taught the two classes. Even though these classes did not formally receive credit for reading mystery novels by filling out the appropriate forms, I observed that some of these students were reading mystery books but were not putting forth the effort or being reminded to fill out a review. The majority of the classes averaged two to three clues a week. Of the eighteen classes, three surged ahead of the others and held the lead most the game. After five weeks, one class had collected enough clues to guess the correct answer and win. Unexpectedly, the class that won the competition was a struggling reader English class. This particular class had complained at the beginning of the game that the other kids were better readers, faster readers, and had people who loved reading so they stood no chance. However, it turned out that almost every student in the winning class read at least one mystery book and submitted a review for the clue. This allowed them to collect clues at a faster rate than other classes that relied on a small number of avid readers to collect clues for the class. Winning the competition fostered a sense of confidence, pride, and excitement that struggling readers often lack.

It is important to have a strong mystery collection with many copies of popular books to implement this game. Consider borrowing popular mystery books from another school to supplement your own collection if possible. I purchased a number of mystery books before I started this game and still had many students putting books on hold and expressing frustration that there were not enough copies. This game is also an excellent opportunity to remind or teach students about public libraries, audiobooks, and online ebook collections. This game also provides an opportunity to booktalk mystery books. During this game, students also read some of the classic mysteries that are more frequently ignored due to uninviting covers, like Nancy Drew

and Hardy Boys. The next time I implement this game, I will spend time with each of the teachers to better explain the commitment necessary for the game to be successful and strategies for getting students to participate. I found that even when I thought the teachers understood the game they were still slightly confused on what their role was in helping their classes play.

Finally, I recommend making the game digital. All the clues were delivered in person with printed photos. This led to a significant amount of wasted paper and ink on clues due to the number of classes needing to receive clues simultaneously. Next time, the clues will be delivered electronically. However, I will still go in person to each class to announce that their clues are ready to be evaluated. I believe the in-person approach to deliveries was important because it reminded the teachers to spend five minutes on the game each week and it was rewarding to see the students get excited. The in-person delivery did however mean that my Fridays were spent visiting several English classes at the beginning of each period for a five week span. Even though the game was not time intensive for the most part, Fridays were often spent counting and delivering clues.

Project #3—Breakout Edu. Breakout Edu is a game that provides a very playful environment in which students use collaboration, critical thinking, communication, and creativity to reflect or process lessons from the classrooms. It also adds competition that helps provide students with motivation. I started the school year by introducing Breakout Edu exactly how the project plan suggests. First, I presented Breakout Edu to the administration and then started the tournament with staff with the support of the administration. As I reflected on the tournament with staff and teachers, I came to some conclusions. When I first ran the tournament, I started the first round out with a game suited for adults called “Time Warp.” “Time Warp” is a well

designed yet challenging game and not every team involved in the faculty tournament solved the game. This was to be expected with this type of game, however, I found that this did not effectively introduce how Breakout Edu can be implemented in the classroom. Upon reflection, I should have started out with a middle school or high school aged game. I was too focused on giving them a challenging game while the focus should have been on highlighting the Breakout Edu experience. Several of the faculty may have lost interest due to this being their first exposure to the Breakout Edu experience. As this activity was structured as a tournament, some teams did not make it past the first round, which means they did not play any games beyond the first and never got to experience the student themed games. The second-round game was called “The Spyder Heist.” This game would have made a better first round game as faculty were able to get a holistic sense of how Breakout Edu works because each group was able to finish the puzzle. It is appropriate to make the games harder as the tournament continues. The teachers expected this and by that point the teams playing were developing ways of using Breakout Edu in their classroom. The Breakout Edu tournament brought staff together in collaborative challenges. They seemed to enjoy learning the new game and working as a team. It was also a great opportunity for me, the media specialist, to reach out and talk to all the teachers. I facilitated conversations at the end of every game on how to implement it into the classroom. These conversations were useful in determining the next steps toward getting the Breakout Edu games into classrooms. To conclude my reflections of implementing Breakout Edu into the school, I encourage following every group’s first round with an e-mail including the names and a short description of some of the games that they may consider using in their classroom. The Breakout Edu website has all of the games well organized on their website. Many teachers immediately

began planning on how to implement Breakout Edu into their own classrooms after I sent them an e-mail showing a few games that may fit into their lessons.

I have currently run about fifteen different Breakout Edu games multiple times each and have learned what makes a good game and what to expect when playing a new game. As a result, I have developed a few tips for using Breakout Edu in the classroom. First, not everyone likes Breakout Edu. I had both staff and students who simply did not enjoy the game. I am not sure more of the staff would have enjoyed Breakout Edu if I had started with an easier game but I found this premise to be true with students too. Some people get very frustrated when they cannot get the answers and preferred answers that were easier to find. Overall from my experience more people enjoyed Breakout Edu compared to those who did not.

My next tip is that when running a game make sure to pay attention to the players and make sure you know the game well. It is your job as the game coordinator to make sure you can provide hints when asked. Sometimes, you may need to fix or save the game during the middle of a round. For example, students have guessed a clue without finding the puzzles, students have attempted to pick or break into boxes without answering the locks, and clues have gone missing between class periods. It is best to have backup clues and to constantly pay attention so you know what the students need to do next to progress.

My last tip is to make sure to have the students reflect with you after the game. It is important for the students to reflect on how they did and how they worked as a team and is also a great opportunity to learn what can be changed or manipulated in the game for future classes. I have found that the students love to talk about the game afterwards. They are more than willing

to offer advice and feedback on aspects of the game they both did and did not enjoy. This can be a great opportunity to get advice to listen to and use for future Breakout Edu.

Recommendations for Additional Products

Project #1—A to Z challenge. As I am still in the process of fully implementing this game for next year, I do not have many additional product ideas for this game. I do however have goals for this game in the future. I am still hoping to use this game as the summer program for which it was originally planned. As a practicing licensed media specialist, and even during my graduate program, I have tried to develop and helped other media specialists develop an effective summer reading program. It seems that most summer programs involve the media specialist putting more time and work into the program than the amount of time students engage with the content. My goal for the A to Z challenge is that after having used it during the school year more students will be familiar with it and will remember to play it during the summer. I will plan on the summer challenges being more fun, still educational, but not as curriculum based as the school year activities.

Project #2—Mystery in the media center. I would love to twist this game to theme it for other genres. I plan to play this game every three years so that I will have all new 6th, 7th, and 8th graders. I would love to go on a rotation with two different genre themed games similar to the other two years. I am in the process of creating a similar game for fantasy/science fiction and historical fiction.

Project #3—Breakout Edu. Breakout Edu has been a success in my school and I have been planning to continue its growth within our school. Plans I have for Breakout Edu include: a science class tournament, monthly games students can sign up as groups to play, student groups

competing against teacher groups, and ultimately having students create their own games. The monthly games would be in the high school. The science teachers and I have talked about the science classes: chemistry, biology, physics, and so on, having a tournament in which the classes compete in a general science themed game. The next idea was to make a game of the month and have students sign up as groups to compete after school to see which group can complete it the fastest. This idea is similar to our third plan of having the students sign up as groups to compete against teacher groups. For example, a student group will try to beat the time of the math teachers in a math themed game. Finally, our last plan is to eventually use Breakout Edu as a more project based lesson. For example, after learning a lesson in math, students will break into groups and each create their own Breakout Edu game based on the lesson. They can then have another group play their game. I am very excited to get started on some of these other projects with Breakout Edu.

Conclusion

All three projects have shown successful results at Zimmerman Middle/High School. I adapted the A to Z challenge from a summer challenge to a semester long project that I am looking forward to implementing next year. The game provides fun activities that can help teachers with differentiated instruction but also uses gamification techniques talked about in Chapter Two as students earn buttons for completing activities of their choice.

The Mystery in the Media Center increased the circulation of the mystery genre and reading for middle school students. The playfulness and competition of the game brought surprising results as the winning team was a class of struggling readers.

Finally, the Breakout Edu tournament led to many teachers wanting to implement the game into the curriculum and has already been played many times with positive results. Seniors who tested out the Breakout Edu media center orientation for next year seemed to enjoy reflecting on the rules and regulations of the media center. Breakout Edu helps provide a playful and competitive experience as students use critical thinking, collaboration and reflection on skills or lessons they have already learned in the classroom. As the media specialist, I have found that I am in an effective position to collaborate and co-teach with other teachers to implement and apply gaming into my school. The results achieved have been positive. I hope these three projects can help other media specialists add play, through gaming, into their media programs and schools.

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