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A VIDEO GAME AS A PEDAGOGICAL TOOL FOR PRE-SERVICE TEACHERS TO LEARN ABOUT BULLYING PREVENTION AND INTERVENTION IN SCHOOL CONTEXTS

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A dissertation submitted in partial fulfillment
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The University of Nevada, Las Vegas

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A Video Game as a Pedagogical Tool for Pre-Service Teachers to Learn About Bullying Prevention and Intervention in School Contexts

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Abstract

Bullying is an act of aggression intended to physically or emotionally harm another. It is a problem that affects millions of K-12 students around the world each year. Victims of bullying may suffer severe effects that follow them into adulthood, including depression and self-harm. In-service teachers, though aware of the problem, are often inadequately trained to correct the current trends. This lack of knowledge and skills is the result of a failure among teacher preparation programs to properly prepare their candidates. This study examined the use of the video game *Bully* as a pedagogical tool in an attempt simulate mastery experiences in the area of bullying intervention. Results show significant increases in the intervention groups ability to define the four main characteristics (intent, physical/emotional harm, imbalance of power, and repetition) of bullying as compared to the control group. The intervention group had a significant change in their reported bullying self-efficacy on all four subscales (needs assessment, implementation, planning, and situational), whereas the control group had no significant changes. There was also a significant change in all four subscales when intervention groups change scores were compared to the control groups change scores Although there were no statistically significant differences in the intervention groups ability to identify and intervene in bullying based on the quantitative scales (either pre/post or against the control), the qualitative results documented improved understanding of the complex nature of bullying as compared to the control group. Including adoption of intervention tactics that are designed to solve the larger issues between the bully and the victim, instead of the simple assigning of traditional consequences (e.g., detention, call home, suspension).

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Chapter 1: Introduction

Bullying poisons the educational environment and affects the learning of every child.

-Dan Olweus

Introduction

This chapter outlines the foundation of a study that examined the use of a video game as a pedagogical tool for teaching pre-service teachers to define, identify, and intervene in bullying situations. It documents the struggles of current in-service and pre-service teachers to define bullying, identify bullying, and ultimately intervene in cases of bullying. A careful review of the literature shows a clear deficit in bullying prevention training within existing, traditional, university-based teacher education programs. The study focused on mastery learning experiences as an essential ingredient to train pre-service teachers in bullying prevention, and examined the use of a video game as an appropriate platform to create those mastery experiences.

Bullying is a significant problem faced by many students throughout the world. Bullying is a form of aggression consisting of a power imbalance, with the intent to cause repeated physical or emotional harm to the victim (Byers, Caltabiano, Caltabiano, 2011). There are four types of bullying: physical (e.g., hitting, pushing, destroying property), verbal (e.g., derogatory comments), relational (e.g., social exclusion), and cyber (e.g., use of electronics/social media) (Mount, 2005). A national survey of students ($N = 2,317$) found that one in five reported being the victim of bullying (Lessne & Yanez, 2016). This finding aligns with other studies that identified bullying rates to be between 20-35% (Bauman & Del Rio, 2006; Cawson, Wattam, Brooker & Kelly, 2000; Espelage & Swearer, 2003; Robers, Kemp, Rathbun, & Morgan, 2014; Seals & Young, 2003). However, there is variation in reporting of bullying with some studies document the rate of bullying between 40-80% (Bosworth, Espelage, & Simon, 1999; Fekkes,

Pijpers, & Verloove-Vanhorick, 2005; Haynie et al., 2001). Although there are discrepancies, the literature documents a substantial number of students' experience bullying and these experiences can result in severe and prolonged consequences.

Bullying affects everyone differently and the effects are not limited to the victim; there are adverse effects for the bully, bystanders, and the overarching educational community (Brank, Hoetger, & Hazen, 2012). The onset of these effects can be immediate or delayed, potentially leading to severe long-term consequences. The effects for the victim may include depression, suicidal ideation, attempted suicide, self-harm, poor self-esteem, poor school attendance, and poor grades (Aalsma & Brown, 2008; Brank, Hoetger, & Hazen, 2012; Garcia & Margallo, 2014; Nansel et al., 2001; Van der Wal, De Wit, & Hirasing, 2003). Skapinakis et al., (2010) conducted an extensive study (*N* = 5,614) and found that students who were weekly victims of bullying had an increase of 30.4% in suicidal ideation over non-victims. Rothon, Head, Klienberg, and Stansfield (2011) examined the correlation between bullying and academic achievement of students (*N* = 2,790) attending 28 different schools across the United Kingdom. Results indicated that being a victim of bullying hinderd a student's chances of reaching national benchmarks when compared to students who did not report victimization.

Regarding offenders, failure to provide positive aid and effective guidance to bullies can reduce their social acceptance. It was found that peer groups initially welcomed and included the bully into their social circle, but by late adolescence that acceptance disapeared (Brank et al., 2012). This diminished social acceptance resulted in a shift of peer group to one consisting of other bullies with a possibility of gang affiliations (Mount, 2005). Moreover, Olweus (1995) also reported that roughly 60% of the students who were initially identified as bullies in grades six

through nine went on to have at least one criminal conviction by their early 20s, with 35-40% having three or more convictions.

The overarching effects of bullying on a community are difficult to quantify but bullying within a school community has been shown to lower in-service teacher morale, a sense of lost faith and trust from parents, both of which are detrimental to all stakeholders (Allen, 2010). Additionally, a report examining school shootings stated that 66% of the attackers felt persecuted, bullied, or threatened (Vossekuil, Reddy, Fein, Borum, & Modzeleski, 2004). This report does not mean that bullying alone caused these tragedies but does imply that bullying might have played a supporting role in the decision of the attacker(s). As Meyer-Adams and Conner (2008) state, "this chronic victimization may have been a powerful motivating force behind the shootings" (p. 212). However, research has shown that in order to reduce bullying, educators in K-12 public schools need to be able to define, identify, and successfully intervene when bullying occurs (Bauman & Del Rio, 2006; O'Moore, 2000).

Statement of the Problem

Challenges in dealing with bullying in K-12 context. Several challenges hinder in-service teachers' ability to handle incidents of bullying effectively, the first being a complete understanding of the definition of bullying. Mishna et al., (2005) found that many in-service teachers failed to realize that bullying is a repetition of incidents. Meanwhile, Byers, Caltabiano, and Caltabiano (2011) found that less than one-third of in-service teachers ($N = 62$ across 26 schools) could identify emotional harm and social exclusion as relational bullying, noting that in-service teachers made direct comments saying that exclusion is not bullying, but a fact of growing up. Further, in-service teachers tend to think of bullying as a physical (overt) act, although it is the least reported by students (Lessne & Yanez, 2016).

In addition to the struggles in-service teachers' have defining bullying, they also struggle to identify occurrences of bullying. One study (*N* = 82) videotaped students on the playground (approximately 53 minutes of observation for each student) and found that in-service teachers only responded to 25% of the incidents of bullying nearby (Craig & Pepler, 1998). In a follow-up study, Atlas and Pepler (1998) videotaped students (*N* = 180) over 28 hours in the classroom and found that in-service teachers intervened in only 37% of observed incidents of bullying. Additionally, Mishna, et al., (2005) found that in-service teacher perceptions tend to determine whether the exhibited behavior was typical childhood behavior or bullying. Pepler, Craig, Zeigler, and Charach, (1994) found that educators tend to overestimate their ability to identify situations, and when compared to student responses, in-service teachers missed over half the incidents of bullying that occurred in their classrooms. This inability to consistently identify cases of bullying may stem from a lack of training in how to identify bullying and bullying behavior.

In-service teachers also lack self-efficacy regarding their ability to handle situations of bullying (Banas, 2014; Boulton, 1997; 2014). In a study (*N* = 249) that gathered data from subjects spread across the United Kingdom, Boulton (2014) found that the average self-efficacy score regarding bullying was neutral, meaning they had a modest level of self-efficacy about their ability to intervene. Bradshaw et al., (2007) found that teachers with higher bullying prevention self-efficacy were more likely to intervene. Yoon and Kerber (2003) conducted a study with elementary teachers (*N* = 98) and found similar results: in-service teachers with a higher self-efficacy were more likely to intervene in cases of bullying. The research documented that those in-service teachers who lacked self-efficacy allowed bullying behavior to continue. Even when in-service teachers witness bullying, they do not always intervene (Banas, 2014).

Failure to intervene in bullying situations could inadvertently signal to students that the bullying behavior is permissable, and thus it could continue and possibly get worse (Banas, 2014).

When they do intervene, in-service teachers believe they are succeeding in halting the bullying. However, often victims felt they were making things worse (Bradshaw et al., 2007). Strohmeier and Noam (2012) have found that the actions of in-service teachers to halt bullying did not always prove effective. In fact, research has shown it can make matters worse for the victim, leaving them open for increased incidents of bullying (Fekkes, Pijpers & Verloove-Vanhorick, 2005). This lack of ability to handle unique situations of bullying effectively could be traced back to an individual's lack of understanding and training. Many in-service teachers simply do not have experience in successfully handling a diverse range of bullying situations using a diverse range of intervention techniques. Thus, additional training is necessary to create more effective interventions. In-service teachers need opportunities to diffuse all classifications of bullying, using multiple techniques, which in turn should help develop their self-efficacy.

The above cited research clearly demonstrates that in-service teachers cannot define bullying, identify bullying behavior, or successfully intervene in bullying situations. Further, in-service teachers have reported low to moderate self-efficacy with regards to handling incidents of bullying. These shortcomings may be linked to lack of experience regarding bullying prevention. Mastery experiences are a potential avenue to developing an understanding of what bullying is and how to intervene in bullying situations effectively, while subsequently raising self-efficacy. Mastery experiences are prior successes and accomplishments with a specific behavior/task (e.g. successfully diffusing situations of bullying) or the mastery of a behavior/task; as such, when faced with similar situations in the future the individual will be more efficacious based on prior success (Bandura, 1997). Mastery experiences have been shown

to be the number one tool to increase an individual's self-efficacy regarding behaviors and tasks (Bandura, 1997). Traditional teacher education programs model mastery experiences in teaching by providing pre-service teachers with multiple opportunities to participate in the act of teaching and everything it encompasses through clinical experiences such as field observations and teaching practicums.

Mastery experiences have been shown to build self-efficacy (Bandura, 1989, 2012). Self-efficacy determines an individual's willingness to act (Bandura, 2012). The lack of mastery experiences regarding bullying prevention may have a negative effect on an in-service teacher's self-efficacy, significantly impacting effective intervention. As many in-service teachers who reflect on their undergraduate education note, there is a distinct lack of focus and training regarding bullying prevention (Byers, Caltabiano, & Caltabiano, 2011). Many state they were not trained to handle bullying on a case by case basis. Rather when training was provided, it focused solely on policy and general behavior management (Byers, Caltabiano, & Caltabiano, 2011). Similarly, based on semi-structured interviews ($N = 13$), Mishna et al., (2005) found that in-service teachers repeatedly stated they did not have training to identify and respond to bullying.

Therefore, as with other mastery experiences associated with teacher training, if educators are to sucessfully diffuse incidents of bullying, they must be trained to do so through opportunities to witness, identify, and intervene appropriately. This type of bullying prevention training should happen during pre-service teacher education before they arrive in the classroom as licensed teachers.

Teaching about bullying in preservice teacher education. Like in-service teachers, pre-service teaches also struggle to define, identify and intervene in bullying. When pre-service teachers ($N = 40$) completed a survey at a large Canadian University, results indicated that only

28% could directly state that bullying involves an imbalance of power, while only 6% understood it as repetitive (Kahn, Jones, & Wieland, 2012; Lopata & Nowicki, 2014). Craig, Henderson and, Murphy (2000) surveyed pre-service teachers ($N = 101$) and found that social exclusion (i.e., relational bullying) was not identified, whether witnessed ($m = .46$) or not ($m = .39$). A mean score below .5 indicated that more than half of the pre-service teachers in this study failed to label incidents of social exclusion as bullying.

Regarding intervening in bullying, Bauman and Del Rio (2006) found through the use of vignettes that pre-service teachers ($N = 82$) failed to address relational bullying correctly, with one participant deciding to completely ignore the behavior, stating "I probably wouldn't intervene unless it was a physical thing" (p. 227). Additionally, participants stated that they would give the bully "a disapproving look, [or] deduct a point, saying that's not nice" (p. 227). Others responded to the victim with comments that implied the victim should simply ignore the behavior. These findings document a failure to understand the goals and motivations of a bully by pre-service teachers, potentially leading to future incidents of bullying.

Several studies have documented that traditional teacher education programs fail to adequately prepare pre-service teachers to understand what bullying is and how to intervene (Benitez, Garcia-Berben, & Fernandex-Cabexas, 2009; Brennan, 2006; Nicolaides, Toda, & Smith, 2002). Craig, Bell, and Leschied (2011) surveyed pre-service teachers ($N = 740$) and found they did not think their teacher training prepared them to meet the challenges of bullying in schools; nor did they have faith in their knowledge and skills to deal with incidents of bullying. In fact, some studies demonstrated that pre-service teachers resoundingly expressed a desire for additional bullying prevention training (Beran, 2005; Kandakai & King, 2002; Lin, Lake & Rice, 2008; Nicolaides, Toda & Smith, 2002). In one study consisting of open-ended

questions, a participant explained the extent of their training for bullying prevention was how to approach a fight on the playground (Nicolaides, Toda, & Smith, 2002). These studies demonstrate the need for holistic, mastery-oriented, bullying prevention training that provides future teachers with sufficient knowledge and skills to intervene in bullying situations when they become full-time teachers.

There is limited research on specific training that teacher education programs provided for pre-service teachers. To date, only two studies were found that documented how teacher education programs specifically taught pre-service teachers about bullying. One study examining pre-service teachers ($N = 106$) during a full semester elective course found that the course significantly impacted participants' knowledge of bullying over a control group that took an unrelated elective (Benitez et al., 2009). Additionally, Banas (2014) found that using an authentic learning experience with pre-service health teachers ($N = 60$) that focused on bullying prevention increased their self- efficacy. Specifically, there were eight authentic learning experiences embedded in the intervention, including a needs assessment to identify the prevalence of bullying, a survey to understand the concerns surrounding bullying among pre-service teachers, and case scenarios. For the case scenarios, the participants had to develop two scenarios centered on identifying bullying and post them on the class discussion board while responding with intervention strategies to the other cases.

There are several possible reasons for the lack of more robust and effective training, and experiences regarding bullying within traditional teacher education programs. The observation of specific acts of bullying could be limited due to the school or classroom the pre-service teacher observes. Further, it would not be ethical for teacher educators to provide pre-service teachers with opportunities to witness and intervene in the various forms of bullying in their practicum

classes. Therefore, in order to ensure all pre-service teachers gain the necessary mastery experiences associated with bullying prevention, teacher educators must devise programming to address this deficit. Regardless of the reasons, research shows that pre-service teachers are not currently getting the training and experience they need regarding bullying prevention and intervention (Benitez, Garcia-Berben, & Fernandex-Cabexas, 2009; Brennan, 2006). The lack of training and mastery experiences associated with bullying prevention and intervention in teacher preperation programs can hinder pre-service teachers ability to properly handle bullying as licensed teachers (Bradshaw et al., 2007; Byers, Caltabiano, & Caltabiano, 2011; Lessne & Yanez, 2016; Lin, Lake, & Rice, 2008).

O'Moore (2000) states there are eight fundamental ideals that teacher education programs must include: what is bullying, what is the prevalence/extent of bullying, signs of bullying, effects, causes, preventative strategies, dealing with victim/bully problems, and understanding/developing school policy. Therefore, the inclusion of bullying training in teacher education programs must be more rigorous than a one-week reading in classroom management or child development course. In order to adequately prepare pre-service teachers for work in classrooms with students bullying prevention and intervention training must be an explicit topic with a significant presence in teacher education programming. Specifically, it needs to be integrated over the course of several class sessions involving multiple activities and readings that will allow pre-service teachers to gain knowledge and simulate mastery experiences.

Summary of the problem. Both in-service teachers and pre-service teachers do not adequately understand the full nature of bullying. When defining bullying, many in-service and pre-service teachers fail to understand the existence of an imbalance of power, the need for repetitive events, and that relational bullying has far more detrimental effects on students than

physical bullying. Due to these definitional issues, both in-service and pre-service teachers have trouble identifying incidents of bullying and bullying behavior, particularly relational incidents, when they occur. Additionally, in-service teachers are overconfident in their abilities to identify and intervene in situations of bullying, potentially leading to increased bullying behavior within the classroom and school. Traditional intervention and discipline tactics used by in-service teachers are typically not effective despite their intentions, because they fail to address the underlying social issues associated with the problem. Failure to define, identify, and effectively intervene in bullying situations all stem a lack of proper training by teacher education programs and professional development. Existing training lacks mastery experiences, which could be the vital piece to the bullying prevention puzzle, because in-service teachers must have high levels of self-efficacy regarding bullying if they are to make effective decisions when bullying occurs.

Researchers have documented that in-service teachers' lack self-efficacy when it comes to intervening in bullying situations (Bradshaw et al., 2007; Yoon & Kerber 2004). For the reason, pre-service teachers need to be trained to enter the classroom on the opposite end of the spectrum, with high efficacy for dealing with bullying. Mastery experiences are the most effective way for this to happen during their initial teacher training, where it can be controlled and monitored, and appropriate feedback can be given (Bandura, 1997; Bautista, 2017).

Statement of Purpose

Mastery experiences. Mastery experiences have been shown to be a successful tool in helping in-service and pre-service teachers gain self-efficacy in various content specific areas including science (Bautista, 2017). In a study involving ($N = 992$) in-service teachers, Choi (2016) found that teachers with more than ten years of teaching experience cited mastery experiences as the number one influence for developing self-efficacy associated with bullying

intervention. This study showed a direct relationship between increased mastery experiences and an increased self-efficacy to intervene. Demonstrating that mastery experiences play a direct role in helping both in-service and pre-service teachers develop knowledge and self-efficacy, and should be explored in depth.

It is impossible to ensure that pre-service teachers will experience the wide variety of bullying situations needed to build their bullying efficacy, in their field experiences. Additionally, it is unethical to put children in harm's way, by allowing pre-service teachers to enter the classroom not ready to identify and diffuse bullying. Therefore, teacher educators must find other pedagogical tools that could provide mastery experiences regarding bullying to ensure pre-service teachers are ready for the classroom. Video games may offer the opportunity for pre-service teachers to engage in mastery learning experiences associated with bullying prevention.

Video games as a pedagogical tool. Video games rival movies and music as categories of modern-day entertainment, pulling in more time and money than either (Nath, 2016). Moreover, they can have a significant effect on players' self-efficacy (e.g., science and academic efficacy) (Ketelhut, 2007; Meluso, Zhen, Spires, & Lester, 2012; Spence & Feng, 2010). Brusso and colleagues (2012) discovered that self-efficacy gained in video games could assist in offsetting early negative performance when learning new material and training of new procedural tasks. Cole, Kato, and Marin-Bowling (2006) found self-efficacy gained from playing a video game developed to address cancer treatment was the most influential predictor of behavioral changes. Participants who played the video game were more likely to stick to their cancer treatment plan, because of increased efficacy gained while playing the game. In a similar study that involved 34 different medical centers across the US and Canada ($N = 375$), players showed

increased self-efficacy to live a healthy life, as well as increased procedural knowledge regarding how cancer works and what it does to the body (Kato, Cole, Bradlyn, & Pollock, 2008).

Video games can also serve as a pedagogical tool in K-12 education. Vogel et al., (2006) conducted a literature review based on 32 studies and reported that video games were more effective than traditional methods when it came to student learning gains and cognitive skill development. In higher education, Barr (2017) assigned undergraduate students ($N = 72$) to either play commercial video games (*Borderlands 2, Minecraft, Portal 2, Lara Croft and the Guardian of Light, Warcraft III, Team Fortress 2*) or to the control group, which played no games. Subjects were then assessed on communication, adaptability, and resourcefulness. The findings indicated that those students who played the commercial video game scored higher during the eight-week trial than those students in the control group. However, despite these successes there is a gap in the literature explicitly addressing video games as a pedagogical tool for teacher education and bullying prevention.

A video game has the potential to provide a safe environment to create mastery experiences. Using video games to train pre-service teachers to learn about bullying has no potential to harm the K-12 student population. If a pre-service teacher fails to identify and intervene in a case of bullying, there is no possibility of long-term adverse effects for the students, as no real students are involved. It should be noted that potential psychological harm for players (pre-service teachers) may occur, as the situations in the game could lead them to relive past experiences. However, procedures to minimize this potential harm can be put in place. That said, video games may provide a number of tools to aid learning. For example, video games allow for the observation and analysis of the same exact behavior and situation across all players. Furthermore, video games offer shared learning experiences within the game, and allow for a

collaborative discussion of strategies used within the game. To date, there is no research found to have previously used a commercial video game to train pre-service teachers to define, identify and intervene in situations of bullying.

Summary of the purpose. The purpose of this study was to use video games as a pedagogical tool to train pre-service teachers to define, identify, and intervene in bullying; while studying its impact on knowledge, self-efficacy, and ability, associated with bullying prevention. The training was designed to provide mastery experiences regarding bullying prevention through the use of a commercial video game as an intervention in conjunction with classroom lessons and reflection.

Intervention

The study utilized three general education methods classes, two classes were assigned as the control group, and one class was the intervention group (based on the number of responses from first class, a second control group class was added). Before the intervention, pre-service teachers in both groups completed several baseline assessments to determine their ability to define and understand bullying (Appendices A-C). Further, the pre-service teachers read a series of vignettes that were designed to determine if they could successfully identify and intervene in bullying situations. Once the pre-assessment was conducted, the control and intervention classes received a traditional classroom lesson (i.e. lecture/discussion) on bullying (definition, prevalence, effects, and what to do). In the final set of assessments both the control group and the intervention group used a behavioral observation sheet developed for this study (see Appendix E) to in conjunction with one of the vignettes. The intervention group then played the video game *Bully* twice. The focus was for the pre-service teachers to identify bullying within the game by using the behavioral observation sheet. All pre-service teachers in the intervention group

played the same missions to ensure the opportunity to observe the same behaviors and have more focused reflective conversations in the classroom. After the initial gameplay and observation, the intervention class had the opportunity to reflect in class on the situations they experienced. They received additional training using the observation protocol before playing the game for the second time. Once the intervention group completed the second playthrough, they retook the assessments.

The use of a traditional lesson and a video game provided the pre-service teachers with the additional content knowledge and possible mastery experiences in order to identify bullying and successfully intervene in bullying situations. This approach also ensured that each pre-service teacher in the intervention group would have the opportunity to observe and intervene through the game and by reflection in various classifications of bullying.

Research Questions

Based on the intervention, the study focused on exploring the effect of using a video game as a pedagogical tool to create mastery experiences for pre-service teachers to learn about and intervene in bullying. Thus, the following research questions were used:

Question 1: Defining Characteristics of Bullying

Quantitative: Is there a significant difference in defining the four characteristics of bullying between control and intervention groups?

Qualitative: What characteristics of bullying are pre-service teachers able to define in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Question 2: Identification of Bullying

Quantitative: Is there a significant difference identifying and labeling incidents of bullying between control and intervention groups?

Qualitative: How do pre-service teachers determine if an incident is bullying in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Question 3: Intervention of Bullying

Quantitative: Is there a significant difference in pre-service teachers' intervention with regards to bullying between control and intervention groups?

Qualitative: What bullying intervention methods do pre-service teachers' use in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Question 4: Self-Efficacy

Quantitative: Is there a significant difference in a pre-service teacher's self-efficacy between control and intervention groups?

Operational Definitions

Bullying: Repeated aggressive behavior, that intends to cause physical or emotional harm, in a relationship that is characterized by an actual or perceived imbalance of power (Espelage & Swearer, 2003).

Bully: An individual who uses aggression to achieve a goal, generally social (Volk, Dane, & Marini, 2014).

Bully/Victim: An individual who is/has been an aggressor and a target of bullying behavior (Espelage & Swearer, 2003).

Bystander: Witness to the bullying incident (Fekkes, Pijpers & Verloove-Vanhorick, 2005).

Victim: An individual who is the target of bullying behavior (Vanderbilt & Augustyn, 2010).

Chapter 2: Literature Review

This review of the literature examines research on bullying, bullying prevention and intervention, pre-service teachers' knowledge of bullying, training for pre-service teachers, video games as a pedological tool, and self-efficacy. Given the large amount of literature regarding pre-service teachers, bullying, and video games, this review focuses on research that aligns with this study. In each search, there were a multitude of articles that did not fit in the context of the proposed research and many searches that identified the same research articles. Resources included books, journal articles, and statistical reports. The search used specific keywords either individually or in conjunction within the following academic databases, ERIC, Google Scholar, and JSTOR. The keywords included were *bullying*, *pre-service teachers, teachers, training, video games, and self-efficacy*.

Bullying

According to Merriam-Webster (2017), the word bully finds its origins in mid-1500s Germany, describing a fine chap or sweetheart. Even though it started as a term of endearment by the late 1700's, the word had taken a sinister turn, representing a hired ruffian, a browbeating person, who is nasty to others that are weaker and smaller (Peters, 2010). The final derivation listed, closely resembles the current definition of a bully and the act of bullying; abuse and mistreatment of someone vulnerable by somebody stronger, more powerful. Language often morphs with modern terminology to meet the needs of current society's vernacular; so, this metamorphosis is unsurprising. This modern dictionary definition above is clear, but neither universally accepted nor utilized by researchers. It is essential to understand and define bullying; only then it is possible to interpret the varying, and sometimes complicated, facts and figures

listed in the research reports regarding bullying and why in-service teachers chose to intervene or not.

Bullying research began building momentum during the 1970s with pioneering researcher Dan Olweus (Brank, Hoetger & Hazen 2012; Carroll-Lind & Kearney, 2004; Hong & Espelage, 2012; Lane, 1989). Olweus, a Scandinavian, is credited with coining the standard definition and modern understanding of bullying. Before his definition, other researchers who explored bullying, stated that bullying "is longstanding violence, mental or physical, conducted by an individual or a group directed against an individual who is not able to defend himself/herself, in the actual situation" (O'Moore & Hillery, 1989, p. 431). It is not until Olweus's (1993) work that a more refined definition emerges "a student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more students" (p. 9). He goes on to define negative actions as the intentionality to inflict injury or discomfort, noting that negative actions

> can be carried out by words (verbally), for instance, by threatening, taunting, teasing, and calling names. It is a negative action when somebody hits, pushes, kicks, pinches, or restrains another by physical contact. It is also possible to carry out negative actions without the use of words or physical contact, such as by making faces or dirty gestures, intentionally excluding someone from a group, or refusing to comply with another person's wishes (p. 9).

Furthermore, Olweus (1993) states an interpersonal relationship exists between the bully and the victim, which can be characterized by an imbalance of power. This imbalance of power derives from the victim having trouble defending themselves and feeling helpless against the aggressor either physically or psychologically. It is this imbalance of power that distinguishes the act of

bullying from other forms of aggressive behavior. For example, peers of similar power involved in a conflict that includes aggression are not viewed as bullying. Stemming from Olweus's definition, bullying consists of four main characteristics: it is intentional, causes physical or emotional harm, it is repetitive, and it includes an actual or perceived imbalance of power (Hymel & Swearer, 2015; Stassen-Berger, 2007).

Issues in Defining Bullying

Repetitiveness. Even though intentionality, repetition, and imbalance of power exist in almost all definitions of bullying, there has been some debate regarding the characteristic of repetitiveness. Slojne and Smith (2008) questioned the validity of the inclusion of the word, "repeated," because it lacks the specificity of what is required to consider an incident repetitive. Specifically, they ask what time frame is needed for the act to be considered repetitious and how many times must the behavior occur in order to be repetitive? Slojne and Smith (2008) argue that one major incident could, and should, be considered bullying based on its potential impact on the victim(s). Olweus (1993) also mentions the possibility of one significant event being considered bullying. Moreover, Volk, Dane, and Marini (2014) agree that researchers should seek to understand not only the frequency of the bullying but the intensity as well. All this debate regarding one significant incident versus repeated incidents demonstrates how difficult the concept of bullying can be, and why teacher educators need to ensure pre-service teachers are adequately prepared to combat bullying. In this study repetition is defined as occurring more than once within a school term and severity is measured as the severity of harm to the victim. Teacher educators should remind pre-service teachers to clarify this point upon accepting a job.

Imbalance of Power. Volk, Dane, and Marini (2014) point out the paradox of the imbalance of power as it relates to dominance hierarchies and bullying. In dominance

hierarchies, aggression should have a low intensity between mismatched opponents or conflict between those who are closely ranked together. However, bullying research does not follow this pattern. Instead, Volk, Dane, and Marini (2014) propose this pattern does not hold true because the bully is sending a signal to the peer group that it would be unwise and possibly detrimental to aggress them. Another issue with imbalance of power is that some definitions begin using the qualifiers perceived or actual. The unanswered question becomes who determines if the imbalance of power is perceived or actual. Is it a school administrator making the decision based on social economic status, or a parent basing it on race and ethnicity? In this study, imbalance of power will refer to physical and social features.

Who is DefiningBbullying? Another issue in determining bullying is that researchers, children, parents, and teachers do not define bullying the same way. So, to ensure understanding, some researchers have been known to provide their own definition when conducting assessments of bullying, often using different scales and instruments. This fact makes it difficult to come to a consensus on what bullying truly means and calls into question the accuracy of reported numbers due to the confusion derived from multiple or competing definitions (Hymel & Swearer 2015). In a study that surveyed (N = 1,820) student and (N = 225) teachers across 51 schools in the United Kingdom, Naylor, Cowie, Cossin, Bettencourt, and Lemme (2006) found that a third of students and a tenth of teachers restricted their definition of bullying to physical and verbal bullying. In a sample of (N = 110) students, Swain (1998) reported that younger children (K-6) often included descriptions that went beyond what bullying is and included anything that was mean directed towards them. Land (2003) found that repetition or the inclusion of repeated events was mentioned by less than 50% of the students when (N = 147) high school students were asked to define bullying. Additionally, Vaillancourt et al. (2008) surveyed (N = 1,767)

students from seven elementary schools and two high schools, using two conditions. Half the students received a definition of bullying, the other half did not. Students who read the definition reported being a victim of bullying less frequently than those who did not. Documenting that being provided a definition of bullying impacted the reporting of victimization. These studies document that there is a failure among stakeholders to define bullying consistently. Differences potentially lead to the under/over reporting of bullying, by students and in-service teachers when assessments and research are conducted. Teacher preparation programs must work to ensure that pre-service teachers genuinely understand what bullying is, so accurate data can be collected, in order to determine if current prevention and intervetion methods are having lasting postive effects.

Prevalence of Bullying

In a US national examination ($N = 2{,}317$) one in five students report being victimized by a bully (20.8%). Of those who report being bullied, 9.44% report being physically bullied, 17.2% report being relationally bullied, and 13.3% report being verbally abused (Lessne, & Yanez, 2016). Grades 6-8th have the highest reports of bullying with 22-31% of students reporting they are bullied, while only 15-21% of high school students reported that they are bullied. This tapering of bullying reports is in line with previous research that documents that bullying decreases with age (Fekkes, Pijpers, & Verloove-Vanhorick, 2005). However, there does exist some variation in the reporting of bullying. Some studies document the rate of bullying is much higher than national reports, putting the prevalence of bullying between 40-80% (Bosworth, Espelage & Simon, 1999; Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Haynie et al. 2001).

Classifications

There are four classifications of bullying: physical, verbal, relational, and cyber. Physical and verbal bullying are a more direct or overt form of bullying. In the early years of bullying research, physical and verbal bullying occupied the focus (O'Moore & Hillery, 1989). It is only in the last twenty years that researchers have begun to understand the role of indirect (covert) bullying such as relational bullying (Slonje & Smith, 2008). Moreover, cyberbullying is the newest classification of bullying as advances in technology and popularity of social media have both dramatically increased over the past decade.

Physical Bullying. Physical bullying is when a bully uses a physical act such as hitting or kicking to harm their victims (Brank, Hoetger & Hazen, 2012; Mount, 2005). Physical bullying may also include taking or destroying a victim's property (Mount, 2005). Physical bullying is most commonly associated with the word "bullying", as it is the most noticeable (Byers et al., 2011; Mishna et al., 2005). Physical bullying is most common in the early adolescents and declines as the children age and mature (Rivers & Smith, 1994). Physical bullying is often the least reported type of bullying, even though it is what most individuals associate with the definition of bullying (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Williams & Guerra, 2007).

Verbal Bullying. In cases of verbal bullying, bullies rely on the use of words to inflict harm or humiliate their victims (Brank, Hoetger, & Hazen, 2012; Mount, 2005). Verbal bullying may take the form of name-calling, teasing, or making sexist or racist remarks. Mount (2005) notes that verbal bullying is the easiest to carry out because it can be done quickly, by passing a fellow student in the hall, which appears like normal behavior, making it harder to observe and identify. Pearce (1991) discusses some minor issues when distinguishing between teasing and bullying, stating it is hard to know when there is a full switch from teasing to bullying. Verbal bullying and relational bullying can often be tied together (e.g., spreading rumors).

Relational Bullying. Relational bullying (i.e., social exclusion) centers on the use of peers to create situations of direct social exclusion (Brank, Hoetger, & Hazen, 2012; Mount, 2005). The goal of the bully is to cut-off the victims' ability to connect with others in social settings. The exclusion can be accomplished by spreading rumors, leaving victims out of the game, or not letting a student sit in a location in class, on the bus, or at lunch (Crick & Grotpeter, 1995). Research shows this type of covert bullying increases as children grow into and through adolescence (Rivers & Smith, 1994). Relational bullying is also one of the hardest for outside observers to see and understand because they can directly witness it and not identify that is bully. For example, a group of students purposely walking past a lunch table to demonstrate that the student sitting there is not allowed to be with the cool group, they may not know what is happening. Relational bullying is the most reported form of bullying by the students, and the least understood by in-service and pre-service teachers (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Williams & Guerra, 2007).

Cyberbullying. Cyberbullying is peer aggression conducted using technology (Brank et al., 2012). One of defining aspects of cyberbullying is that unlike more traditional forms of bullying, where it can end once the victim leaves the physical environment, cyberbullying is ever-present, with the victim unable to entirely escape if they have a smartphone or home internet access (Slonje & Smith, 2008). Another feature that differentiates cyberbullying from traditional bullying is the ability of the bully to be anonymous, while still carrying out socially orientated goals. One issue with cyberbullying is that 90% of students will not report it to an adult because they believe the adults are ill-equipped to handle the situation, presumably because they did not grow up with the technology that now exists (Mark & Ratliffe, 2011). Cyberbullying is one of the least reported forms of bullying, frequently stemming from the child's concern that

they will lose access to the technological device connecting them to where the bullying is occurring.

Bullying and Social Information Processing

Social information processing can be used as a tool to explain that a bully has a positive expectation, based on prior experience, that bullying will achieve their goal (Besag, 1989; Gini, 2006). Social information processing (SIP) is a framework used by researchers to explain how social cognitions are interwoven and connected to social behaviors (Dodge & Rabiner, 2004). It describes how individuals would respond, interpret, and react to various social cues based on past experiences, rules, knowledge, and schemas. Originally, social information processing was designed to help understand children who exhibited aggressive behaviors, by allowing researchers to find variations in their information processing that might explain the aggressive behavior (Bryan, Sullivan-Burstein, & Mathur, 1998; Maghsoudi, 2015). There are two main types of aggression, which are derived from social information processing, proactive and reactive (Coie, Dodge, Terry, & Wright, 1991). Reactive aggression is an individual's aggressive response to a situation based on miss-encoded social cues (Crick & Dodge, 1996). Proactive aggression is characterized by the expectation of a positive personal results based on prior experiences for the individual (Crick & Ladd, 1990).

Six Steps. There are six steps in the social information processing model (figure 1). Step one is the encoding of social cues for the giving situation. There are two pitfalls here, it is possible for an individual to improperly encode the social cues as well as failure to encode all the cues in the giving situation (Nigoff, 2008). Failure to properly encode the social situation means that the individual would continue the remaining steps with incorrect information, potentially leading to further conflict and confrontation. The second step is the interpretation of the encoded

social cues. At this step it is possible that the induvial will incorrectly interpret the social cues (Nigoff, 2008). Step three is the clarification of goals for the current social situation, the desired outcome is either continued or adjusted (Crick & Dodge, 1994). The goals will either be internal (e.g., self-survival) or external (e.g., enhanced relationships). Step four is the recollection of the response based on past experiences or the creation of new responses if the situation is new (Crick & Dodge, 1994). In step five the individual will evaluate each possible behavioral response to determine likely outcomes and their efficacy to enact or perform the response. Step six is where the individual enacts the chosen behavior (Crick & Dodge, 1994).

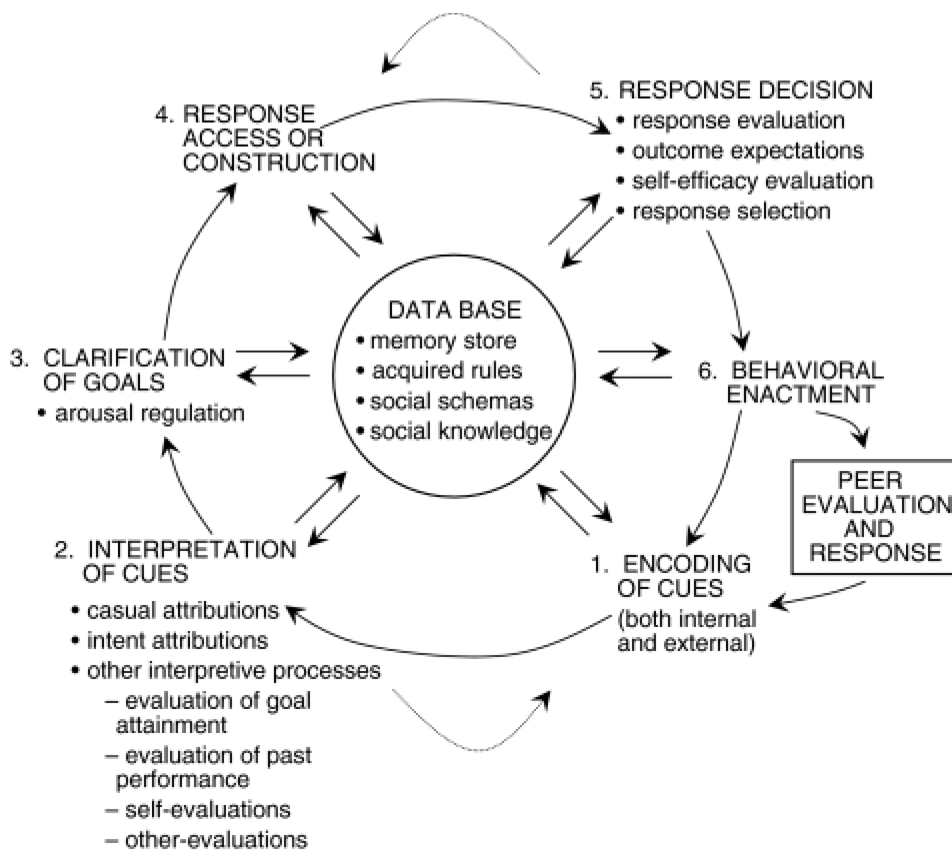

Figure 1. Social Information Processing Model (Crick & Dodge, 1994)

Reactive and Proactive Aggression. Aggressively responding to miss-encoded or interpreted cues is reactive aggression (Crick & Dodge, 1996). Aggressive youth are more likely than their peers to view vague aggravation as malicious intent, and as such can sometimes have an aggressive response, either in retaliation or defense, to incidents that do not warrant them (Coie, Dodge, Terry, & Wright, 1991). Reactive aggression is often accompanied by anger, hostile facial expressions, impulsive acts, or distress, signs that can assist educators in understanding who was the aggressor of the situation (e.g., a student responds to a joke by threatening to hit or hitting the other student) (Boivin, Dodge, & Coie, 1995; Coie et al., 1991). Reaative agression is not bullying.

Aggressively responding to social situations with the expectation of a positive outcome is proactive aggression. Aggressive children have been found to expect positive outcomes from aggressive behavior and feel more confident in their ability to perform the aggressive acts (Crick & Ladd, 1990). They view aggression as a valuable means to obtain the desired outcome. Dodge et al. (1987) list a few observables features of proactive aggression: the use of physical force to get what they want, getting others to gang up on a peer, or threatening. Coie et al. (1991) also outline proactive aggression behaviors to include taunting, intimidation, coercion and making fun of another student. Price and Dodge (1989) state that the observation of these behaviors would be seen without any apparent provocation and with intent to inflict physical or emotional harm. Boivin, Dodge, and Coie (1995) also note that proactively, aggressive behavior does not have to include overt displays of emotion, and the aggressor might not appear angry. Proactive aggression can be bullying.

It is the intent (goal) behind the act of bullying that makes it proactive aggression and links it directly with social information processing. In a study involving (N = 3,884) students,

Rolan and Idsoe (2001) note there exists a significant link between bullies and proactive aggression. Students who were identified as bullies had a higher relationship with proactive aggression on the constructed scales; they expected positive outcomes from their bullying behavior.

Bullies and Victims

Bullies. A bully is an individual who uses aggression to achieve a goal, generally social (Volk, Dane, & Marini, 2014). Bullies are often thought of as large and powerful figures that simply bully because they can, without thinking about how it affects the victim (Sutton, Smith, & Swettenham's 1999). However, many bullies can understand the viewpoint of others, including their intentions and goals (Gini, 2006). Sutton, Smith, and Swettenham's (1999) work demonstrates that bullies cognitively process emotions and morals, which goes against many people's views. The most common goal of bullies is seeking an increase in reputation/status, while secondary goals include seeking an increase in resources (food and wealth) and attracting mating partners (Stressan-Berger, 2007; Volk, Dane, & Marini, 2014).

Effects of Being a Bully. Bullies may not have out right physical effects based on their bullying, but Vanderbilt and Augustyn (2010) state they have a higher risk of engagement in destructive activities such as using tobacco, alcohol, and other drugs. Rigby, (1998) surveyed ($N = 819$) students between the ages of 13 and 16, found that boys who self-reported as being a bully had poorer mental health in comparison to those who were not involved in bullying. In a longitudinal study over 14 years ($N = 2{,}464$), it was found those that bullied students in their youth (14-15) were more likely to internalize mental health problems in adulthood (age 27) (Sigurdson, Undheim, Wallander, Lydersen, & Sund, 2015). Additionally, bullies are initially successful with

peer and social acceptance; however, this success will diminish by late adolescents as their peer groups morph to include mostly other bullies or in severe cases gang affiliations (Mount, 2005).

Victims. A victim is an individual who is the target of bullying behavior (Vanderbilt & Augustyn, 2010). Garcia and Margallo (2014) examined a year's worth of research regarding bullying, which resulted in a review of roughly 169 research papers from across the globe. They found several characteristics that imply a greater vulnerability to victimization by bullies. Those characteristics included body weight, psychological/physiological factors and sexual orentation, Race/ethnicity and gender were missing from this list, but as both items continue to draw questions and attention from researchers, they are explored below.

Race/Ethnicity. Research shows African American adolescents report being bullied significantly less often than white or Hispanic children (Spriggs, Iannotti, Nansel, & Haynie, 2007). Juvonen, Graham, and Schuster (2003) found minority youth were less likely to be victims of bullying than white children. Mouttapa, Valente, Gallaher, Rohrbach, and Unger (2004) found that among (N = 1,368) respondents in 16 schools throughout Southern California, the victims were disproportionately Asians. A national report puts the numbers of ethnic minorities reporting being bullied between 15-25% lower in all categories of bullying than those reported by white students (Lessne & Yanez, 2016). These reports are both inconsistent and contradictory. It is possible that cultural differences might impact reports of victimization. Some findings suggest victimization reports among racially diverse youth are lower based on cultural differences and expectations held in those communities (Sawyer et al., 2008).

Gender. There are differences in gender with respect to the classification and pervasiveness of bullying. According to a number of studies, males are more likely to report overt forms of victimization (Fekkes et al., 2015; Sawyer et al., 2008), while females report

covert forms of victimization (Rueger & Jenkins, 2014). The national report conducted by Lessne and Yanez (2016) found that 18.8% of males reported being bullied, while 22.8% of females reported victimization. More recent studies show an equalization of the bullying across genders. The perceived discrepancy relates back to parents, in-service teachers, and students' having a challenging time distinguishing what bullying is beyond the overt (physical) (Hong & Espelage, 2012; Kochenderfer-Ladd & Pelletier, 2008).

Body weight. Research shows students who are overweight are at an increased risk for bullying (Kukaswadia, 2009). Conversely, research also finds students who were overweight were more likely to be identified as bullies than those students who are considered to have an average weight (Janssen, Boyce, Craig, & Pickett. 2004). There are differences based on gender regarding overweight or obese students. Males who are overweight are more likely to be victims and bullies where females who are overweight are only more likely to be victims (Hong & Espelage, 2012).

Psychological/Physiological factors. Students with language impairments, autism, anxiety, anger, depression, attention-deficit disorder, or attention-deficit hyperactivity disorder, may be more susceptible to bullying (Hong & Espleage, 2012; Westby, 2013). A large study found students (N = 1,694) with depressive symptoms were more likely to be victimized by peers than students who had no history of depression (Perren, Dooley, Shaw, & Cross, 2010); however another study (N = 2,766) did not sustain these results (Fekkes et al., 2005;). Baumeister, Storch, and Geffken (2008) found those who were diagnosed with a learning disability (N = 77) were at a greater risk for victimization over students who were not diagnosed (N = 226). Thompson, Whitney, and Smith (1994) interviewed students (N = 91) who had an educational disability and

found that 66% of them of the students identified bullying as a problem, conversely only 25% of (*N* = 92) students who were indentified cited bullying as a problem.

Sexual orientation. Bullying occurs frequently among the lesbian, gay, bisexual, transgender, and questioning (LGBTQ) youth. In a nationwide survey, Kosciw (2004) found nearly 40% of LGBTQ youth experienced physical harassment daily, while 63% said they do not feel safe at school. Additionally, Birkett, Espelage, and Koenig (2009) surveyed (*N* = 7,376) students and found that those students who identified as LGBTQ were more likely to report high levels of bullying as compared to heterosexual students. These numbers are two - three times higher than the physical bullying numbers reported for students who do not identify as LGBTQ.

Effects of being a victim. Being the victim of bullying may have severe long-term effects. In a longitudinal study, Bogart (2014) showed that chronically bullied students had physical problems affecting their walking, running, and sports participation. Over a one-year period, Houbre, Tarquinio, and Lanfranchi (2010) were able to document that students who are victims of bullying show a reduced self-concept compared to the control group of students who were not victimized by bullying. Gina and Pozzoli (2013) found victims of bullying are two times as likely to suffer psychosomatically (mind and body) as are children who are not victims. Additionally, bullying victimization often leads to poor academic performance, including standardized testing scores. To escape this negative experience of victimization, many students simply skip school (Brank et al., 2012). The pattern of skipping school to avoid victimization shows a documented negative domino effect of bullying. It is vital that bullying is addressed early because these adverse side-effects often continue into adulthood with prolonged bullying victimization. Victimized youth show increased rates of future violence-related behavior (Aalsma & Brown, 2008; Graham-Bermann, Cutler, Litzenberger, & Schwartz, 1994).

Bully/Victims. Bullying behavior can osculate. An individual once identified as a bully, will not always exhibit bullying behavior. Research states that bullying and bullies/victims fall along a continuum, and individuals can fall into that continuum as victims, bullies, which would make them bully-victims or bystanders (Espelage & Swearer, 2003).

Effects of being a bully/victim. Individuals who are both bullies and victims are at the highest level of danger to have long-term adverse effects. Vanderbilt and Augustyn (2010) state they bully-victims have the highest use of alcohol consumption and weapon carrying. Bully-victims exhibit the lowest attachment to school which results in increasing problem behaviors (Cunningham, 2007). Bully-victims also have a higher chance of being from a family that has low warmth (absence of kind a caring parents/siblings) and have little to no support at home (Baldry & Farrington, 2005). Additionally, bully-victims have high rates of anxiety and psychosis (Vanderbilt & Augustyn, 2010).

Bystanders. Bystanders are witnesses to the bullying. Rivers, Noret, Poteat, and Ashurst (2009) found that roughly 63% of students reported witnessing bullying. Another study that filmed 300 episodes of bullying found that bystanders were present 88% of the time. Bystanders only attempt intervention 9-19% of the time (Fekkes et al., 2005; Howard, Landau, & Pryor, 2013). Bystanders most often notice physical (overt) forms of bullying, whereas relational and verbal bullying (covert) is often harder to see, meaning it goes unnoticed and unrecognized (Strohmeier & Noam, 2012; Wang, Iannotti, & Nansel, 2009).

Effects of being a bystander. Bullies and victims are not the only ones who will suffer consequences from bullying; it affects the bystanders as well. Students who witness bullying have the chance of either co-victimization (experiencing the abuse of the victim) or revictimization (recalling their prior experiences). These effects have been known to lead to

anxiety (Brank, Hoetger, & Hazen, 2012). Rivers and Noret (2010) found bystanders can also suffer psychological effects, including suicide ideation. These negative effects of being a bystander are why bystanders do not intervene in cases of bullying (O'Connel, Pepler, & Craig, 1999). However, if the bystanders choose to act, they are effective in ending the bullying most of the time (Fekkes et al., 2005).

Community. The overarching effects of bullying on a community (whole school and surrounding geographical proximity) are hard to measure, but cases of bullying and victimization lead to lower in-service teacher morale, and parents who have lost faith and trust in the school (Allen, 2010). These compounding issues create a downward spiral, leading to a reduced perception of school climate, and the potential to foster new bullying behavior (Wang, Berry, & Swearer, 2013).

Bullying Intervention and Prevention in Schools

To combat bullying, in-service teachers need to understand the complexity of bullying and be able to define, identify, and intervene in bullying situations. Without this understanding and ability to intervene, comprehensive bullying prevention and intervention programs will not be successful. Unfortunately, the above research documents that in-service teachers struggle with all three requirements.

Defining bullying. The first thing in-service teaches must be able to do is to define bullying. However, many of them struggle when it comes to this task. While conducting semi-structured interviews with in-service teachers (*N* = 13), Mishna et al. (2005) found that most of the teachers failed to include repetition as part of their description when defining bullying. In a survey of in-service teachers (*N* = 141), Boulton (1997) found that 25% of the teachers did not believe that spreading rumors, intimidation by staring, and taking belongs constituted bullying.

Additionally, most respondents did not view "leaving people or laughing at someone's misfortune as bullying (Boulton, 1997, p. 230). In an extensive study that examined 1,820 students' and 225 in-service teachers' views on bullying, it was found that only 12.9% of teachers labeled social exclusion as bullying, and only 17.8% of teachers stated that bullying involved a repetition of events (Naylor, Cowie, Cossin, de Bettencourt, & Lemme, 2006). In-service teachers struggle to define bullying and they fail to understand the dangers of relational bullying. As previously noted, failure to properly define bullying could have long-lasting consequences for the entire educational community as it affects an in-service teacher's ability to stop bullying due to their lack of identification skills (Boulton, 1997).

Identifying bullying. The ability to identify bullying from situations and observation is also cause for concern. Research finds in-service teachers frequently overestimate their ability to detect bullying, linking back to the misunderstanding of what bullying is and what it looks like (Kochenderfer-Ladd & Pelletier, 2007). In-service teachers also struggle with the identification of relational bullying. In a sample of in-service teachers ($N = 62$) who were given written scenarios, there was a significant difference in teacher response to physical bullying versus relational bullying, in that they identified the physical bullying but failed to recognize the relational bullying (Byers et al., 2011). In a similar study involving in-service teachers ($N = 13$), Mishna (2008) found they could provide an operational definition of bullying, but when given contextual examples of bullying, nearly all were unable to identify the specific acts within the scenario that constituted bullying.

The intervention of bullying. Intervening in bullying is vital. However, it seems like intervention does not always happen, and a successful intervention is even rarer. Fekkes et al., (2005) found in a sample of ($N = 2{,}766$) subjects that "when teachers knew about the bullying,

they often tried to stop it; however, in many cases, the bullying stayed the same or even got worse" (p. 89). Additionally, there seems to be even less intervention with relational bullying. In a focused study (*N* = 94) in-service teachers, the teachers viewed social exclusion less seriously and were less likely to intervene as compared to physical or verbal bullying. In-service teachers have noted that they want additional training on bullying. Boulton (1997) found that among (*N* = 141) in-service teachers 87% responded positively to wanting more training on bullying intervention. In fact, research shows that teacher intervention can make matters worse for the victim if the educator is not trained correctly, because there is a chance the bullying behavior continues or increases (Fekkes et al., 2005).

Lack of efficacy regarding bullying. Self-efficacy is the belief in one's ability to succeed (Bandura, 1997). Hawley and Williford (2015) highly recommended that bullying prevention should focus on an in-service teacher's self-efficacy. Their reasoning is because it has been found time and time again that in-service teachers lack self-efficacy regarding their ability to handle situations of bullying (Banas, 2014; Boulton, 1997, 2014; Yoon, 2004). In a significant study that spanned 31 schools and 144 classrooms (*N* = 2,766), a direct correlation was found between teacher's efficacy regarding bullying and bullying reports, the higher the efficacy of the classroom teacher, correltated to lower reports of bullying (Veentstra, Huitsing, Lindenber, & Sainio, 2014). However, this is not always the case, Oldenburg et al. (2015) found that in-service teachers who had a higher self-efficacy also had a greater number of self-identified victims in the classroom. This could be explained by research that found a curvilinear relationship between teacher self-efficacy and victimization, students whose teachers were over confident about their abilty to magane bullying faced bullying similar to those students whose teachers were lacking in self-efficacy (Gregus et al., 2017). The authors offered several suggestions for why this

relationship could exist, including in-service teachers holding normative beliefs about bullying, naive teachers, and bullying prevention/intervetion strategies that are overly simplified. Additionally, because self-efficacy can be improved through mastery experiences (Bandura, 1977, 1986), teacher training must go beyond traditional means and include opportunities for practicing how and when to apply specific bullying intervention strategies that present zero risks to actual students (Gregus et al., 2017).

Whole school intervention programs. The cited literature shows the struggles in-service teachers have with defining, identifying, and intervening in situations of bullying. The primary strategy that schools use to curb bullying is full implementation of a school-bullying program that may or may not include focused teacher training. The first documented bullying intervention program was nationally implemented in Norway and was evaluated by Olweus (1991), who found that after the intervention victimization dropped by half. The program focuses on the saturation of bullying prevention into the school culture, meetings with parents and community members, anti-bullying activities led by teachers, and decisive discipline to discourage bullying.

From the early 1990s through the recent spike in national attention, hundreds of bullying prevention reports have been written throughout the world, but only a small percentage of them provide data to back up claims or to document success. In fact, Ttofi and Farrington (2010) found over 600 reports that discussed bullying prevention, 53 of which included explicitly targeted programs to reduce bullying, with only 44 presenting data on the issue. Through a thorough examination they found that the 44 programs evaluated were successfully able to reduce bullying and peer victimization by 17-23%, but this number is a combination of the full set of programs, meaning some were obviously more successful than others (Ttofi & Farrinfton, 2010).

The most important take away from the research centered on whole school intervention programs for teacher educators is looking at what aspects of the programs work, and how those tools can be incorporated into teacher preparation courses. Ttofi and Farrington (2010) list the essential program elements as "parent training/meetings, improved playground supervision, disciplinary methods, classroom management, teacher training, classroom rules, a whole school anti-bullying policy, school conferences, information for parents, and cooperative group work" (p. 41). The teacher training included in whole school bullying prevention programs does not always train educators to define, identify, and intervene in bullying, but instead it teaches them to run activities for the students (Salmivalli, Kaukiainen, & Voeten, 2005). For example, one workshop had in-service teachers learn to help students draw helpful and unhelpful thoughts when it came to deal with bullies (Boulton, 2014). In a study that reviewed a bullying prevention program that involved ($N = 48$) in-service teachers that participated in four training sessions over the course of one year, there was also no specific training to observe and identify bullying (Salmivalli, Kaukiainen, & Voeten, 2005). The lack of focused training in the whole school bullying prevention programs might be the reason they are only moderately successful. This statement is supported by a study that trained 15 in-service teachers to identify and intervene in bullying directly which saw a significant decline in reports of bullying (Newman-Carlson & Horne, 2004).

Pre-Service Teachers and Learning About Bullying

The research presented in this literature review documents the struggles in-service teachers face in not only defining bullying but also its identification. Further, it shows vast differences exist in what educators' regard as serious incidents of bullying and what students consider to be serious incidents of bullying. Furthermore, Strohmeier and Noam (2012) have

found that even when teachers directly witness bullying, their actions to halt occurrences do not always prove effective. Because of this, it is important to explore what pre-service teachers know about bullying and what training, if any, they receive regarding bullying.

Defining and understanding bullying. Beran (2006) found pre-service teachers hold negative attitudes towards bullying and consider it a genuine problem; however, there is a difference in understanding that there is a problem and understanding the intricacies of the problem. Bauman and Del Rio (2006) studied ($N = 82$) pre-service teachers and found that they considered relational bullying to be a less severe form of bullying. Consequently, they were less likely to have empathy and less likely to intervene in these situations. At the same time, they viewed physical bullying as the most serious; this is consistent with research results regarding how in-service teachers define bullying (Boulton, Hardcastle, Down, Fowles & Simmonds, 2014; Yoon & Kerber, 2003; Kahn, Jones & Wieland, 2012). This is a massive disconnect from the beliefs of the students, who find relational bullying to be the most severe and prevalent form of bullying (Hazler et al., 2001). In one study ($N = 270$), Nicolaides, Toda, and Smith (2002) found that pre-service teachers lacked an understanding about the decline in bullying victimization as students progressed through middle and high school; they thought bullying was a consistent common experience. Research also finds pre-service teachers believe bullies have poor social skills and self-esteem (Nicolaides, Toda, & Smith, 2002). Multiple studies have demonstrated just the opposite; bullies have average to above average self-esteem (Limber, 2002).

Intervention and self-efficacy. Not only are pre-service teachers unable to accurately define bullying, they struggle with intervening as well. In four focused group interviews with ($N = 21$) pre-service teachers, Raven and Jurkiewicz (2014) found that participants lacked the skills

necessary to intervene in cases of bullying. In terms of self-efficacy, Brenan (2006) found that pre-service teachers lack the efficacy to manage bullying behavior in the classroom and around the school. This result is consistent with a study completed by Nicolaides, Toda, and Smith (2002) who found pre-service teachers did not posses enough efficacy in their ability to make bullies stop bullying.

Training. There is a lack of comprehensive bullying prevention and intervention training in teacher education programs (Boulton, 1997; Byers, Caltabiano, & Caltabiano, 2011; O'Moore, 2000). Boxer, Musher-Eizenman, Dubow, Danner, and Heretick (2006) argue the lack of pre-service teacher training in bullying prevention and intervention is the single most significant obstacle preventing the bullying problem from getting better. The cited research demonstrates that pre-service teachers are not prepared to define bullying, identify bullying and intervene in situations of bullying when they enter the classroom (Bauman & Del Rio, 2006; Kahn, Jones, & Wieland, 2012; Lopata & Nowicki, 2014). They do not understand bullies or how bullying is occurring, and they do not have the efficacy to deal with the situations (Banas, 2014; Brennan, 2006, Nicolaides, Toda, & Smith, 2002). Pre-service teachers must have specific learning opportunities and training to increase their ability to define, identify and intervene in cases of bullying (Boulton, et. al., 2014; O'Moore, 2000). Therefore, proper training must be added to ensure pre-service teachers have the correct knowledge, awareness, and skills for addressing bullying (Beran, 2006; Boulton, Hardcastle, Down, Fowles, & Simmonds, 2014; Nicolaides, Toda, & Smith, 2002; O'Moore, 2000; Pepler, Smith, & Rigby, 2004).

Training Content for Pre-Service Teachers

Pre-service teachers need to be trained in a variety of aspects when it comes to bullying. In fact, O'Moore (2000) reminds us that training needs to include defining bullying, the

prevalence of bullying, the effects of bullying, signs, and identification of bullying, prevention strategies, how to deal with bullies and victims, and school policies. Even though O'Moore (2000) provided this list, there was no outline on how to implement this training.

However, Benitez, Garcia-Berben, and Fernandez-Cabezas (2009) specially designed a course centered on bullying that demonstrated significant improvements in pre-service teachers' abilities to understand bullying, detect victims and bullies, choose proper intervention strategies, and increased their efficacy. The contents of that course included defining bullying, the prevalence of bullying, characteristic of bullies/victims, effects of bullying, and intervention strategies. Unfortunately, there was no mention of the specific intervention strategies used for the research. Newman-Carlson and Horne (2004) effectively trained educators using a similar approach through the Bully Busters program. The training included, understanding bullying, recognizing the bully/victim, interventions for the bully, and interventions for the victim. The training took place through three separate workshop sessions, using didactic and experimental approaches. Most of the content outlined above could be presented to a class of pre-service teachers and done through a traditional lecture format; the more difficult task is teaching pre-service teachers how to intervene.

Rigby (2012) outlines six approaches that educators/schools should be using when it comes to responding to bullying. The first approach is traditional discipline (penalties/punishments). Olweus (1993) notes discipline (sanctions) should be originally discussed with the whole class, easy to administer, and adaptable based on the situation. In current school settings it is possible that the specific disciplinary procedures will be based on the school district policy, so teacher educators should use local school policies in conjunction with their training. In the second approach Rigby (2012) outlines how the educator can strengthen the

victim. It is noted that this approach is best suited for students who can respond to the bully without the assistance of an adult. Students should be taught to look the bully in the eye, respond calmly, nonchalantly, and without hostility to the bully's comments. The third approach is mediation, which will only work if all parties agree to the mediation. However, it should be noted that researchers disagree with this approach. For example, Philipson (2012) notes that mediation is based on equal power dynamics and it generally fails when there are high hostility and an imbalance of power, which are characteristics of bullying. The fourth approach outlined is restorative practices/justice (Rigby, 2012). Restorative justice requires the bully to admit their wrongdoing, acknowledge the harm they have caused, and act to compensate the victim. Rigby (2012) notes this works best by including interested parties in a community conference (parents, administrators, bystanders). Grossi and Dos Santos (2012) examined restorative justice regarding bullying in four Brazilian schools and found that overall the practices lead to improvement in school culture. The fifth approach Rigby (2012) outlines for bullying intervention is the support group method. This method involved seven steps in which engages students coming up with a plan for how things can be made easier for the victim and the teacher asks them to carry it out, while carefully monitoring the situation. The final tactic is the method of shared concern, which is based on the Pikas (2002) model of shared concern. The model of shared concern includes meeting with students, the bully, and the victim separately, before meeting as a group to agree on ways to improve the situation. Duncan (1996) documents the shared concern models as effective because it actively engages the bullies (without being punitive) and victims to solve the problem. For the research intervention in this study, the researcher trained pre-service teachers in all methods outlined above except mediation, based on the understanding that bullying is an imbalance of power.

As previously noted, in-service teachers have made assumptions about bullying situations they witnessed based on their own beliefs instead of a set of concrete scales. Individual beliefs and assumptions should not play a role in the decision making of in-service or pre-service teachers' decision to intervene in cases of bullying. For instance, Kochenderfer-Ladd and Pelletier (2007) noted some in-service teachers witnessed bullying but considered it normative behavior for child development. Teacher educators must ensure pre-services do not make assumptions and are trained to identify specific bullying behaviors and intervene based on those behaviors. Within the training for observation, Craig, Henderson, and Murphy (2000) note that pre-service teachers need to be directly trained in understanding body language, facial expressions, and additional non-verbal cues.

In conjunction with the outlined training, pre-service teachers need opportunities to have mastery experiences in the identification and intervention of bullying. Mastery experiences have proven the number one method for increasing self-efficacy and teacher preparation programs must provide opportunities for pre-service teachers within their core curriculum. The mastery experiences are essential because increased self-efficacy is tied to the willingness of educators to intervene in bullying. Video games are a method of providing those mastery experiences, and their use, in conjunction with the traditional teaching of the topics, can provide pre-service teachers the tools they need to effectively manage and mitigate bullying in the classroom setting.

Video Games as a Pedagogical Tool

Video games are defined as an electronic game where the user controls the images on a screen (Merriam Webster, 2017). More specifically games are generally "entertaining, interactive, rule-governed, goal-focused, competitive, and they stimulate the imagination of player" (Sitzmann, 2011, p. 492). Video games are generally perceived as entertainment for

adolescents. However, professionals and researchers have been using video games as a tool for a variety of applications, including, acquiring content knowledge and improving cognitive function. This choice is based on cost and the ability to play out dangerous situations in a safe environment, as well as the increased level of enjoyment they might bring (Ortiz, Bowers, & Cannon-Bowers, 2015; Przybylksi, Rigby, & Ryan, 2010). The literature outlines the effectiveness of video games in acquiring content knowledge (Akpan & Andre, 2000; Anderson & Barnett, 2015; Bai, Pan, Hirumi, & Kebritchi, 2012), improving cognitive function (Barr, 2017; Vogel et al., 2006), and increasing self-efficacy (Ketelhut, 2007; Martin-Bowling, 2006; Meluso, Zhen, Spires, & Lester, 2012; Spence & Feng, 2010).

Video Game Types

There are two main types of video games: serious games and commercial off the shelf (COTS) games. Serious games are games explicitly designed with the end goal of being used for education/training for either prevention or intervention (Girard, Ecalle, & Madnant, 2013; Wouters, van der Spek, & van Oostendrop, 2009). Commercial off the shelf games are designed for entertainment purposes (Tannahill, Tissington, & Senior, 2012; Wouters, van der Spek, & van Oostendrop, 2009). Simulations are a subset of both serious and COTS games. Simulations stipulate that the game must center on reality (Sitzmann, 2011). It is not always simple to differentiate the categories, Sitzmann (2011) notes that the lines are frequently blurred in naming things either games or simulations. He uses the term simulation games and defines them as "instruction delivered via a personal computer that immerses trainees in a decision-making exercise in an artificial environment to learn the consequences of their decisions" (p. 492).

Even though serious games occupy a large space in the gaming education research, COTS games can play a significant role in higher education classrooms to aid in teaching the students a variety of transferable skills (Tannahill, Tissington, & Senior, 2012).

> It is easy to dismiss such video games as commercially driven distractions, but in fact games have been linked to increased motivation, more varied learning methodologies, and performance at least equal to that achieved by traditional means, but with greater enjoyment of the learning process (Tannahill, Tissington, & Senior, 2012, p. 1).

Why Video Games

The use of games for learning and training is split into four categories of learning: cognitive (knowledge and cognitive skills), motor skills (acquisition), affective (attitude and motivation), and communicative (cooperate and negotiate) (Wouters, van der Spek, van Oostendorp, 2009). These four categories of learning provide researchers the opportunity to specifically target desired outcomes. For example, in a meta-analysis that started with 248 studies it was found that "across people and situations, games and interactive simulations are more dominant for cognitive gain outcomes" (Vogel et al., 2006). Video games have been successfully used for wide instructional purposes, from simulating tactical situations in the military, an example of motor skills, to patient training in the medical field, an example of cognitive. Examined below by content is research on video games that includes both serious games and COTS as an instructional/intervention medium, documenting that they deserve to hold a place on the mantel of instructional pedagogical tools, not just in education, but many fields.

Military. The purpose of examining military use of video games is twofold. First, it illustrates video games are used in a variety of contexts, second, the military serves a population

that must be at least 18 years old, mirroring participants in this study. The military has successfully utilized over 50 types of video games as training tools for well over 15 years. Beidel (2012) points out military use of games for training shows substantial positive impact on understanding the mechanics of ground warfare, another area of learning where it is hard to gain mastery experience during training. The video game with the most recognition and use is titled *America's Army* and was developed by the military in 2002 to assist in virtual basic training and team-based missions (Alvarez, 2005). It is used both before and after basic training, to help recruits understand the requirements of military life and make decisions based on actual past battles scenarios (Alvarez, 2005). Other military branches utilize versions of games to assist in either training or recruiting, and commanders note soldiers who have used the game-based training are more successful in field-based exercises after the training, demonstrating the in-game experiences (mastery) are effective (Alvarez, 2005).

Nursing. Nursing has a robust set of research data available regarding the use of video games as an intervention for learning, changing subject behavior, and building efficacy. Pater, Shattell, and Kagan (2015) conducted a thorough review of the literature examining the effectiveness of video games as interventions and found several very successful studies where use of video games increased a patient's knowledge and changed behavior at a rate equal to or better than traditional methods (talking, meetings, support group). For example, a study conducted by Merry et al. (2012) showed a video game produced more cases of depression remission when the game was used to assist teenagers in overcoming cognitive-behavioral problems. Additionally, Kato, Cole, Bradlyn, and Pollock (2008) found adolescents and young adults who used a video game had a more significant adherence to the structure of taking their cancer medication (a behavior change) versus the control group.

K-12 education. The field of education has been slow to adopt the use of video games as a pedagogical tool, but the researchers and educators using the games have demonstrated video games can help increase learning and motivation. Anderson and Barnett (2013) used the video game *Supercharged!* With middle school students to study electromagnetic concepts and found students (N = 59) who played the video game (experimental group) showed a significant difference (increase) in content knowledge over students (N = 32) who did not play the game (control group), based on pre-and post-assessments. Additionally, students who played the game were able to provide more detailed descriptions of the science content versus the control group (Anderson & Barnett 2013). It is notable that students in the experimental group who played the video game rated their knowledge of the topic lower, even though it was not. The researchers attributed this to the students not understanding the game as a pedagogical learning tool and the lack of reflective opportunity in the game. They did not know they were learning, so they rated themselves lower. Anderson and Barnett (2013) further state if the game was developed to include additional reflective meta-cognitive activities it could enhance the learning experience.

Akpan and Andre (2000) used a simulation that allowed students to digitally dissect a frog: they completed the simulation either, before dissection, in place of the dissection, or after the dissection. Results indicated that students who completed the simulation before or in place of the dissection learned significant more anatomy than the other students who did not use the simulation or used it after the fact. Bai, Pan, Hirumi, and Kebritchi (2012) conducted a study of (N = 437) eighth graders using the mathematical game DimensionM. They found that students who played the game performed significantly better on post assessments in comparison to the control students. These results are consistent with multiple findings in school settings that

demonstrate using video games can increase the knowledge of learners beyond that of traditional methods (Mayo, 2009; Williamson & Facer, 2004).

Higher education and teacher training. Video game use in higher education does exist, but research on specifics is sparse, with only a few instances showing a direct link to teacher education, and those were mostly simulations without a corresponding, published research article. For example, the University of Virginia used a simulation to assist elementary pre-service teachers with handling parent-teacher conferences and is currently seeking financial opportunities to expand the program for teacher educators (Bell, 2017). The program is similar to the one out of the University of Central Florida. Dieker, Hynes, Stapleton, and Hughes (2007) used virtual classrooms to train pre-service teachers in a variety of contexts including parent meetings. The initial results indicated it provided realistic experiences and the program has branched out to include more universities (Dieker et al., 2014).

Video games and training for bullying prevention. In an exhaustive search regarding bullying and the use of video games, only a handful of studies were found, and only one was linked to working with either in-service or pre-service teachers regarding bullying (Schussler, Frank, Wright, Lee, & Mahfouz, 2017). There were some studies that focused on video games as a tool to help students understand and prevent bullying. The first game designed for students was designed to explore how to reduce bullying in schools was called "FearNot!". It was designed to mirror an elementary school environment, where students and teachers are virtual cartoon-like characters who take on different roles (i.e., bully, victim, or bystander) (Vannin et al., 2011). Participants witness a bullying incident through the game, then take control of a character who was a friend to a victimized student, to find solutions to help the victim cope (Vannin et al., 2011). Once the participants make their decisions to help the victim cope, the game plays out

based on the given advice. The study took place over three weeks at schools in the UK (26 schools) and Germany (22 schools), which included (N = 1,186) students. The students involved in the intervention played the game for thirty minutes each week. The results were mixed during its initial rollout. In the German context, the study helped students become defenders of bullying victims and be more knowledgeable about coping strategies. The United Kingdom sample had no significant effects in helping students become defenders of bullying victims or more knowledgeable about coping strategies. The authors suggest that this result was based on the vast awareness that already existed within the UK with respect to bullying (Vannin et al., 2011). They noted among the participating schools, 16 UK schools had bullying prevention programs in comparison to just two German schools.

Another popular simulation game, Second Life, was used to create cyberbullying scenarios that could be used by school personnel to help students understand and overcome bullying. Wright, Burnham, Inman, and Ogorchock (2009) set out to see if the virtual environment would help students better understanding cyberbullying. To create the cyberbullying situations within Second Life the researchers conducted two focus groups (N = 13) at two different middle schools, to ensure the scenarios were authentic. Wright and Burnham (2012) published more specifics regarding the previous study, adding additional information on how two students help refine the scenarios to ensure the accuracy and believability of the cyberbullying scenarios. For example, on a Facebook scenario, they were able to refine the text to make it more accurate/believable for the students. They found that the use of virtual environments (games) could accurately represent various situations of cyberbullying and could potentially be an effective tool to help educate students.

One study utilized pre-service teachers specifically regarding bullying. Schussler, Frank, Wright, Lee, and Mahfouz (2017) used virtual roleplaying (VRP) modules to develop pre-service teacher competence regarding bullying. The VRP was designed so that pre-service teachers could communicate with a chatbot that had pre-determined response to simulate a conversation with a student. Before the students used the VRP, they role-played a relational bullying scenario, allowing the researchers to gather baseline data. Upon completion of the role-play the participants ($N = 27$) were given training on bullying, which included principles of non-violent communication and how to mediate student-bullying conflicts. Afterward, the pre-service teachers completed another round of role-playing, before being divided into a control (who completed another role-play) and the intervention that used the VRP. For the intervention, the pre-service teachers spent one hour interacting with Eli in the VRP, engaging in three conversations, all text based (the pre-service teacher typed responses as if they were the teacher). The results indicated that students in both the control and the intervention groups performed equally well in the scenario in terms of staying calm, building trust, and showing support, while avoiding talking to the students together and attempting to get the students to apologize. However, pre-service teachers who used the VRP were significantly more likely to show empathy, find a solution with the student, and used more refined words in connection to the prior training (Schussler, Frank, Wright, Lee, & Mahfouz 2017). The researchers noted that VRP could become an essential tool to help pre-service teachers respond to bullying without the limitations of traditional role-play (time, acting skills, and no ability to review transcripts). Though not labeled a game, the use of online virtual roleplaying has several elements consistent with a video game and therefore it is included in the review of the literature as it is the nearest research to the framework of this study.

The above studies used video games that were specifically designed for educational use. At the time of this writing, there exists no known research that uses a commercial off the shelf game to assist pre-service teachers define and understand bullying or develop their efficacy towards intervening in cases of bullying.

Video games and self-efficacy. There is research regarding video games and self-efficacy; it is limited but does suggest the use of video games will increase a participant's self-efficacy. Brusso, Orivis, Bauer, and Ekleab (2012) discovered that efficacy gained in video games could assist in offsetting early negative performance when learning new material and training for new procedural tasks. Cole, Kato, Marin-Bowling (2006) found that self-efficacy gained from playing a video game centered on understanding cancer and cancer treatment was the most influential mediator in predicting increased treatment behavioral changes; meaning that participants who played the game were more likely to stick the treatment plan, based on increased efficacy. A similar study across 34 different hospitals using the same video game found the same results; the video game increased the subjects' self-efficacy and knowledge regarding understanding their cancer and the treatment plan (Kato, Cole, Bradlyn, & Pollock, 2008). High interactivity, in conjunction with the opportunity to make decisions within situational experiences, while using games, can empower participants, enhancing their self-efficacy (Sitznamm, 2011).

Overarching effectiveness of video games. Sitzmann (2011) conducted a meta-analysis that included 65 research articles on simulation games (defined above) and found participants who use a simulation game versus traditional training/learning methods had higher levels of declarative (11%) and procedural knowledge (14%) and retained (9%) the information longer. Vogel et al., (2006) also completed an in-depth review of 32 studies involving video games and

simulations and found that across varying learner demographics (e.g., gender and age) and contextual situations (e.g., education and health care), interactive simulations or games accounted for increased cognitive gains over traditional learning methods. These reported gains are consistent with another review of literature conducted by Wouters, van der Spek, and Van Oostendorp (2009). Not surprisingly, the games within those reviews are designed for the topic in which they were used for training or intervention (or were very task specific/focused), examples including dissection, volume, and catheter training (Vogel et al., 2006).

Games as mastery experiences. Mastery experiences are successful authentic experiences that have been performed by someone (Bautista, 2011). A video game can offer mastery experiences if the right game is selected based on the desired outcome. Rutledge (2012) notes "games are avenues to develop mastery experiences that promote self-efficacy" because they provide opportunities for practical problem-solving in low-risk environments and provide evidence of accomplishments and success (p. 2). Additionally, Kato (2012) states "video games can provide wonderful opportunities for creating mastery experiences when the real world does not" (p. 1). Furthermore, Rachels and Rockinson-Szapkiw (2017) note that video games "provide(s) mastery experiences by starting the game-player at a low difficulty level at which the player finds success then incrementally increasing difficulty" (p. 75). The ability to gradulaly build skills in an environment with very low-risk makes video games an ideal tool for providing students the opportunity to gain mastery.

Video Games: Why They Work

Video games work to increase knowledge and self-efficacy on par with, if not better than, traditional methods for a variety of reasons, including experiential learning (Lee & Hoadley,

2007; Ortiz, Bowers, & Cannon-Bowers, 2015) active learning (Sitzmann, 2011) and situated learning (Shaffer, Squire, & Halverson, 2005).

Experiential learning. Experiential learning theory (ELT) provides a valid explanation of how games can have more significant effects on learning than traditional methods. Experiential learning theory is defined as the process where knowledge is created through the transformation of experience, resulting from the mixture of grasping and transforming experience (Kolb, 1984). Bandura (1977) lists ELT as a valuable tool for increasing efficacy. Experiential learning was not designed to replace behavioral or cognitive learning but provide a holistic perspective that learning combines experience, perception, cognition, and behavior (Kolb, 1984). This idea is vital in higher education. Cantor (1997) found the inclusion of experiential learning helped students to understand theory in a practical context. Experiential learning theory connects directly to video games as through game developers focus on creating transforming experiences. (Ortiz, Bowers, & Cannon-Bowers, 2015).

Active learning. A second idea supporting the use of games in learning and interventions is active learning (Sitzmann, 2011). Active learning is the direct involvement of the student through engagement in the learning process and the act of playing the video game requires an initial level of engagement. Additionally, students who are active in the process of learning have been shown to comprehend more of what they are learning, while engaging in increased critical thinking (Ortiz, Bowers, & Cannon-Bowers, 2015). Video games by their nature are active learning; one cannot be a passive participant in a video game in order to progress the game and meet the requirements of completion (Ortiz, Bowers, & Cannon-Bowers, 2015).

Situated learning. Situated learning is a third lens through which to view and understand how video games can increase knowledge and critical thinking in a way that is superior to traditional methods. Situated learning is best explained by Brown and Duguid (1996)

> even when the individual instruction is extensive if the social context is missing, confusion and disillusion are likely. By contrast, even though instruction is minimal, quite complex practices can be learned effectively and easily where the social context is evident and supportive (p. 51).

The ideas behind situated learning fall directly in line with several principals of instructional design. To make tasks authentic, they need to be anchored within a larger problem, while the environment is designed to represent the environment that the learner will be engaged in once they complete the task (Choi & Hannafin, 1995). Situated learning holds a place when discussing video games as a tool for learning, providing authentic contexts and environments for the learner to practice making decisions based on the concept (Ortiz, Bowers, & Cannon-Bowers, 2015). Situated learning utlizes games as the main connection into the realm of mastery experiences because if the games are chosen correctly to align with the situation, they offers players the opportunity to gain mastery experience and increase self-efficacy (Gee, 2008).

Sitzmann (2011) captures these three ideas well discussing how video games are an immersive training tool that combine active learning and entertainment. Regarding helping pre-service teachers understand and build self-efficacy to intervene with bullying, it seems that video games are a smart place to start, with the potential to create mastery experiences based on the use of ELT, active learning, and situational learning (Gee, 2008; Lee & Hoadley, 2007; Ortiz, Bowers, & Cannon-Bowers, 2015; Sitzmann, 2011)

Conceptual Framework: Self-Efficacy

Viewing and understanding bullying from the viewpoint of in-service and pre-service teachers' self-efficacy is essential to determine their willingness to intervene in situations regarding bullying. Self-efficacy is known as a construct that is a predictor of behaviors. It is regarded as one of the essential prerequisites for behavioral change because it affects overall effort expended (Bandura, 1977; Hawley & Williford, 2013). Self-efficacy comes from Bandura's (1977) social cognitive theory. Social cognitive theory is a triadic interplay in an effort understand human functioning, defined as an individual's individually perceived ability to cope with a specific task; it is a judgment of one's capability to bring about the desired outcome or successfully enact a behavior (Tschannen-Moran & Hoy, 2001). Self-efficacy is best understood as a personal determinant (Bandura, 2012).

Bandura (1997) showed self-efficacy is a predictor of behavior stating, "beliefs in one's capabilities to organize and execute a course of action required to produce given attainment [goal]" (p. 3). It is regarded as one of the most important prerequisites for behavioral change because it affects overall effort expended, and willingness to attempt activities based on perceived outcome success (Bandura, 1977; Hawley & Williford, 2013). If a person does not think that they can successfully cope, they will avoid the situation altogether. Bandura (1977) states, an individual will "get involved in activities and behave assuredly when they judge themselves capable of handling situations that would otherwise be intimidating" (p. 194). There are four ways for an individual to increase self-efficacy: mastery experiences (i.e., prior success with similar tasks), social modeling (i.e., seeing someone similar succeed through perseverance), social persuasion (i.e., persuaded to believe in themselves), and ensuring a healthy body and mind (i.e., controling emotional states) (Bandura, 2012). Understanding these as a teacher educator is vital because "self-efficacy beliefs influence how well people motivate themselves

and persevere in the face of difficulties through the goals they set for themselves, their outcome expectations, and causal attributions for their successes and failures" (Bandura, 2012, p. 13). Of the four methods outlined above, mastery experiences are noted as the most powerful in increasing self-efficacy (Bandura, 1997).

Goddard, Hoy, and Hoy (2000) state it is likely that educators do not possess the same level of self-efficacy in every teaching situation; instead their domain-specific self-efficacy will vary. For example, just because a teacher has high self-efficacy in delivering course content, it does not mean they will have a high self-efficacy in handling negative interactions between students. Lack of self-efficacy in specific domains relating to students' emotional and social needs (e.g., managing student behavior) could mean the educator might fail to act in specific situations. A high school math teacher may have a high degree of self-efficacy regarding her delivery of content in a 10th-grade Geometry class, but a low degree of self-efficacy when it comes to guiding students through a technology-based activity or working with students who feel excluded. Bandura (2012) confirms this, stating "people's beliefs in their capabilities vary across activity domains and situational conditions rather than manifest uniformly across tasks and contexts in the likeness of a general trait" (p. 13).

How a teacher will act toward students who are bullies and victims is influenced by the teachers' degree of self-efficacy in their ability to successfully deal with the specific problem of bullying (Alvarez, 2007). This is particularly significant when it comes to bullying, as teachers' beliefs about their ability to successfully intervene in and managing bullying will only improve if the teachers believe they can create effective changes when it comes to bullying (Beran, 2006). Results from a study conducted by Bradshaw, Sawyer, and O'Brennan (2007) were consistent with Boulton (1997), showing a correlation between an educator's self-efficacy and the

likelihood of intervening in cases of bullying. Additionally, research demonstrates that even though educators understand that bullying is at least a moderate problem in their school, they do not respond or intervene because they lack the self-efficacy to do so (Banas, 2014). Unfortunately, research also consistently shows this problem continuing throughout the years as teachers are concerned about bullying but also lack the confidence and self-efficacy needed to manage the behavior (Boulton, 1977; Ryan, Kariuku, & Yilmaz, 2011). This research shows if educators are to intervene and persist in handling bullying incidents, they first must increase self-efficacy, and the most effective means of doing so is through mastery experiences.

Begotti, Tirassa, and Maran (2017) found that in-service teachers had higher self-efficacy than did pre-service teachers, but both held the same outcome expectations regarding bullying. It is possible that this increase in in-service teachers' efficacy is based on past experiences. A main source of efficacy is firsthand experience in managing situations, something pre-service teachers often lack. It would be difficult to create these authentic bullying situations with actors, and not ethical to leave pre-service teachers alone to handle situations of bullying among actual students. Bauman and Del Rio (2006) found some pre-service teachers already had relatively elevated levels of confidence in their ability to respond to bullying, but this high level leaves some cause for concern as research demonstrates educators tend to overestimate their effectiveness regarding bullying (Viadero, 1997).

To increase pre-service teachers' self-efficacy regarding bullying intervention and prevention, they must have the opportunity of mastery experiences (prior success). Successful mastery experiences are shown to be an effective way to increase self-efficacy; while failure to master an experience has the opposite effect (Bandura, 1977, 1997, 2012). Additionally, Bandura (2012) cautions "if people experience only easy successes, they come to expect quick results and

are easily discouraged by setbacks and failures" (p. 13). Efficacy is gained through each successful mastery experience because it provides for positive self-evaluations, which in turn increases expectations for future success (Bong & Skaavik, 2003). To ensure that pre-service teachers can identify and intervene in moments of bullying, their self-efficacy about their ability needs to be in place before they leave the teacher education program. Thus they must gain mastery experiences during this time.

Self-efficacy research in teacher education

There is research that explores a pre-service teacher's self-efficacy with regards to bullying (Bauman & Del Rio, 2006; Boulton, 2014; Craig, et al., 2000; Yoon & Kerber, 2003) and the results indicate that they lack efficacy when it comes to bullying intervention. However, there are only two studies that trained pre-service teachers with a specific focus on their self-efficacy with regards to bullying. Banas (2014) used authentic learning tasks to deliver bullying prevention/intervention training content during the pre-service teacher's coursework. Eight authentic learning experiences were embedded in the intervention including a needs assessment to identify the prevalence of bullying, a survey to understand concerns surrounding bullying among pre-service teachers, case scenarios, and the creation of training for use in the classroom and professional development. The 60 subjects completed quantitative pre and post assessments that were specifically designed to measure their self-efficacy to understand bullying, deliver bullying content and assist students with bullying. The paired samples *t*-test found significant increases in the pre-service teachers' self-efficacy across each domain. An argument could be made that the researcher missed an opportunity to gather qualitative data. This information could have been helpful in the triangulation of data, understanding pre-service teachers' knowledge

before and after, and possibly determining which of the eight activities need to be modified or deleted.

In the second study conducted by Benitez, Garcia-Berben, and Fernandez-Cabezas (2009), 199 pre-service teachers took a semester-long course centered on bullying covering topics including defining bullying, identifying bullying and strategies to intervene in bullying. The results of the pre and post assessments showed significant gains in a pre-service teacher's self-efficacy in intervening in bullying situations. Once again, there was no qualitative data gathered during the pre or post assessments, limiting both triangulation of the results and understanding of which interventions helped. These two studies demonstrate that providing pre-service teachers targeted training should allow for an increase in knowledge and self-efficacy regarding bullying. However, neither study gathered qualitative data to see what shortcoming exited in the pre-service teacher's prior knowledge and if it was still there during the post assessment. To correct this researchers should gather quantitative and qualitative data.

Chapter 3: Methodology

There are three main types of research, quantitative, qualitative, and mixed methods (Creswell, 2009). The purpose of quantitative research is to gather numerical data (e.g., polls, questionnaires, and surveys) to generalize the results across groups of people to explain a phenomenon (Babbie, 2010). Qualitative research is designed for researchers to understand and describe a phenomenon, usually from the participants' viewpoint (Merriam, 2009). When quantitative and qualitative methods are combined, the research is called mixed methods design (MMD). Onwuegbuzie and Leech (2004) note that using mixed methods is the gold standard of research because it allows researchers to enhance the interpretation of quantitative findings. Instead of merely stating the results are significant (i.e., low probability that the results occurred through random chance), the researcher might be able to extrapolate what specific actions led to the significant results. The ability to explain significant findings is accomplished through the triangulation of data, which has been shown to result in more accurate conclusions and interpretations (Greene, Caracelli, & Graham, 1989).

This research study utilized mixed methods to determine if a video game can be used as a pedagogical tool within a teacher education classroom. Specifically, this study set out to determine if a video game intervention could assist a pre-service teacher's ability to define, identify, and successfully intervene in incidents of bullying. A major component of using a video game as a pedagogical tool within the classroom was to try and create mastery experiences for the content the pre-service teachers are learning in the classroom. It is vital that the game is directly connected to the curriculum and discussion/reflection time occurs (Sitzmann, 2011). To be an effective tool, pre-service teachers must have an opportunity to reflect on how the game-

based bullying models experiences in schools and what interventions could be used to diffuse the situations.

Most of the research presented in the reviewed literature is grounded in quantitative methodologies. To date, researchers have captured little qualitative data regarding the training of pre-service teachers to prevent and intervene in bullying. Qualitative data might help to explain pre-service teachers current understanding of bullying and intervention practices, why those beliefs exists, and why a training (intervention) did or did not work. Mixed methods offer an opportunity to capture not only the pre and post quantitative data to determine if the intervention worked, but also qualitative data to help verify the results and possibly understand what aspects of the intervention were most effective. Johnson & Onwuegbuzie (2004) discuss MMD as a tool that when done correctly, results in complementary strengths and non-overlapping weaknesses, resulting in potentially superior support for the hypotheses (e.g., explaining/supporting quantitative findings). For this reason, quantitative and qualitative data were given equal priority in addressing the research questions and ran concurrently using a convergent parallel design (CPD) (Creswell & Plano Clark, 2010).

Convergent Parallel Design

Convergent parallel design is an approach whereby quantitative and qualitative data are given equal importance, and once the data is gathered, they are analyzed separately, and results are then merged to answer the overarching research questions (Creswell & Plano Clark, 2010). The convergent parallel design is one of the most employed forms of MMD (Creswell & Plano Clark, 2010). Originally designed in the 1970s to assist in the triangulation of data, it is used for the interpretation and verification of quantitative data (Creswell & Plano Clark, 2010). The

purpose of CPD is obtaining different but complementary data related to the research questions to provide the more accurate answers.

Convergent parallel design, as with all methodologies has strengths and weakness. The strengths are that it can create a more holistic view of the research question, while at the same time providing a deeper understanding of the topic (Creswell, Plano Clark, 2010). Conversely, the challenges include ensuring that equal weight is given to both sets of data during collection and the merging of the two datasets. Additionally, it is possible that the quantitative and qualitative data do not tell the same story and the researcher will have to determine why the variation in the data exists and what it means for the research questions (Creswell, Plano Clark, 2010). To date, there was only one research thesis that used CPD to study bullying and it related worked with in-service teachers rather than pre-service teachers (Houran, 2015).

Study Outline

The following sections outline a convergent parallel mixed method design to address the literature and conceptual framework regarding pre-service teachers' ability to define bullying, identify situations of bullying, and intervene in cases of bullying. The goal of the study was to determine the effectiveness of using a video game as a pedagogical tool within the pre-service teacher classroom.

The setting, population, and sample. The study took place at a large urban university located in the western United States. The population consisted of individuals who were enrolled in either their first general methods pre-service teacher education course (control), or their first introduction to education course (intervention). Participants needed to be enrolled in the courses because the game was used as a pedagogical tool in conjunction with general classroom instruction. Fifty-seven students completed the initial instrumentation as either a member of the

control or the intervention, but only forty-six students completed both sets of instrumentation. The demographics associated with control group were as follows: 9 Caucasians, 6 Hispanics, 2 Latinos, 1 Hawaiian, 1 Pakistani, 2 Asians, and 4 not identifying. The sample consisted 9 males and 14 females, with a mean age of 25 and a standard deviation of 8.3. The demographics associated with the intervention group were as follows: 8 Caucasians, 6 Hispanics, 1, Latino, 2 Asian, 1 African-American, 1 Vietnamese, with 2 not identifying. The sample consisted of 8 males and 13 females, with an approximate mean age of 22 with standard deviation of 3.7.

Instrumentation. The first instrument was the *Pre-Service Teachers Knowledge and Attitudes Questionnaire* (PSTKA). The name was modified for this study to align with its use with pre-service teachers (Appendix A). The *Teachers Attitudes Questionnaire* was initially developed, and implemented by Nicolaides, Toda, and Smith (2002). In their research, there was no inclusion of the psychometrics, however psychometrics were calculated prior to analyses and linked to the subscales below as Cronbach's alpha.

The *Pre-Service Teachers Knowledge and Attitudes Questionnaire* was used to answer the research question one regarding defining the characteristics bullying. It also provided information regarding pre-service teachers' previous experience with bullying and knowledge about bullying (Cronbach's alpha: .730), characteristics of bullies and victims (Cronbach's alpha: .695), strategies for assisting victims (Cronbach's alpha: .413). This form also included the demographic information. Permission was granted to use and modify the original questionnaire. Modification of the instrument included formatting, removal of the definition of bullying and three questions beyond the scope of the current research (e.g., did your teacher help you with bullying).

The second instrument is the *Bullying Prevention and Intervention Self-Efficacy Scale* (Appendix B). The name was created for this study, as the questions were adapted from an unnamed instrument (Banas, 2014). The original instrument included 24 questions that assessed pre-service teachers' self-efficacy skills related to bullying prevention/intervention within five professional standards. These standards include: needs assessment ($\alpha = .840$) (e.g., creating surveys/gathering data on bullying that takes place in schools), planning ($\alpha = .895$) (e.g., creating teaching/training materials), implementation ($\alpha = .884$) (e.g., running bullying prevention activities), administration ($\alpha = .940$) (e.g., leading district policies regarding bullying), and communication ($\alpha = .914$) (e.g., communicate facts to constituents). Permission was granted for the use and modification of the instrument. Because the focus of the study is the individual teacher, six questions were deleted that were directly related to whole school policy and implementation. Additionally, four questions were modified to represent the individual role of a teacher in bullying intervention, creating a new area called situational bullying efficacy. The new psychometrics are; needs assessment ($\alpha = .884$), planning ($\alpha = .825$), implementation ($\alpha =.876$), situational ($\alpha =.847$).

The third instrument was a series of 15 *Bullying Vignettes* (Appendix C). These bullying vignettes were re-written based on past examples in the literature (Bauman & Del Rio, 2006; Craig et al. 2000; Yoon & Kerber, 2003). This instrument measured pre-service teachers' ability to identify, label, and intervene in bullying situations to determine the impact of the intervention. The vignettes were explicitly written to describe bullying incidents that can be specifically identified as one of four classifications (physical, verbal, relational, and cyber). Further, an additional set of three non-bullying vignettes was included to determine if pre-service teachers can identify non-bullying behavior. Following each vignette, participants responded to a series of

questions designed and adapted from previous research (Banas 2014; Boulton, Hardcastle, Down, Fowles, & Simmonds, 2014). The questions were designed to determine if the pre-service teachers can identify the situation as bullying, classify the type of bullying, and successfully intervene as one of the six methods outlined by Rigby (2013).

The fourth instrument used in the study was a *Behavioral Observation Protocol* (Appendix E). This protocol was designed for the study to help participants identify bullying behavior, understand the behavior, and decide on appropriate interventions. Moreover, it was grounded in research on proactive aggression and the definition of bullying (Crick & Dodge, 1994; Crick & Ladd, 1990). It ensures that pre-service teachers classify three main characteristics of the bullying definition (imbalance of power, intent, repetition) before labeling an incident bullying (Hymel & Swearer, 2015; Stassen-Berger, 2007). Additionally, it follows Briggs (2014) research on interventions to help address the root cause(s) of the behaviors. Included in the form is the a) understanding that behaviors could be seen without any apparent provocation and with intent to inflict physical or emotional harm (Price & Dodge, 1989); and b) the behaviors do not have to include overt displays of emotion by the aggressor, but could include them for the victim (Boivin, Dodge, & Coie,1995). It was used in conjunction with the video game and the vignettes to determine if pre-service teachers could identify the aforementioned characteristics of bullying.

The fifth instrument was a series of focus group questions (Appendix D). These questions were designed to gather further qualitative data on the participants' ability to define, identify and intervene in situations of bullying. Additionally, there were questions regarding the training and intervention pre-service teachers received in order to help determine the effectiveness of the individual components.

Intervention Video Game

The video game used as the intervention tool in this study is called *Bully*. The game is a commercially available game, developed by Rockstar Games (2006). When it was released, *Bully* drew immediate criticism from parents and political figures. As a result, the game was banned in Brazil, faced lawsuits to prevent it from being released in Florida, and all Walmarts in the United States banned its sale (Bradford, 2009). Eventually, Rockstar was forced to change the name to *Canis Canem Edit* in Europe (Bradford, 2009).

Despite this criticism, the researcher chose this game specifically because it is closely tied to the school structure (creating realism). As Bradford (2009) noted, players are expected to go to class and participate in recreation (possibly team sports). The game is a microcosm of education and the world (Rauch, 2009). Bradford (2009) goes on to note that there is an additional resemblance to the real world, in that *Bully* contains themes of social exclusion, body shaming, gendered stereotypes, economic divisions, and discrimination. Additionally, Rauch (2009) stated that *Bully* is a game about power dynamics among children, which makes it an ideal candidate for pre-service teachers learning about bullying.

Because of the focused school setting, *Bully* allows participants to vicariously view other "educators" in the school setting. Pre-service teachers witnessed in-game characters (i.e., fictional teachers) respond or do not respond to the bullying as it takes place, which specifically aligns with Bandura's (1997, 2012) research on improving self-efficacy via vicarious experiences, while possibly providing mastery experiences. An unpublished pilot study recently conducted found that 70% of pre-service teachers who played the game *Bully*, believe that the game depicts actual bullying events that take place in schools, the other 30% believed the bullying seemed extreme (Laferriere, 2018).

The setting of the game *Bully* takes place in a fictional rural New England town and at Bullworth Academy. The story follows the main character Jimmy (the player-controlled protagonist) who quickly discovers that Bullworth Academy is full of bullies and sets out to bring peace to the school. The game allows players to explore the school and surrounding town, as they work through linear story missions designed to help victims of bullying. The story is broken up into six chapters, each chapter has a new set of bullies that Jimmy must overcome. Within each chapter, there are a handful of missions that progress the story (gathering objects, helping other students/teachers) to overcome a variety bullies.

The game is played from the third person perspective, meaning the player can see the entire character they control. Players must navigate Jimmy through customary school days which includes making sure he is on time for class. The player can also freely interact with non-playable characters (students, teachers) by simply walking up to them. The player controls Jimmy through a game controller. For example, in the mission *Save Algie*, Jimmy is tasked with befriending Algie as he walks through the halls, so Algie is not alone, preventing him from being bullied. The player must control Jimmy to stay near Algie as they walk through the halls and respond to any threats that appear. The victims and bullies vary throughout the game including stereotyped depictions of students (e.g., nerds, preppies, greasers, and jocks).

Study Design

Three different classes were used, comprising two different courses, there were two section Introductory General Methods (control) and one section of Introduction to Secondary Education (intervention). The study was designed to fit within the structure of the course. All students participated in the study components, but only those that consented and completed the second set of instrumentations were included in the data analysis.

Baseline. To collect baseline assessment data, all students in the control and the intervention groups completed three instruments (Appendices A-C) in class or via a Qualtrics online survey. Participants were given a deadline to complete the assessments to ensure completion prior to stage one. See table one for a general outline of the study.

Stage One. In stage one of the study, all students in both the control and intervention groups had a traditional lesson on bullying (Appendix F). The first task within the lesson asked students to create mini-comics that displayed typical bullying situations. Specifically, they were instructed to draw what they believe is the most prominent situation of bullying that occurs in a K-12 school and explain what they would do to intervene in the situation. When they finished, students participated in a lecture and discussion-based lesson that covered the following information regarding bullying: prevalence of bullying, definition, and classification of bullying, characteristics of bullies and victims, and how to intervene in cases of bullying. All statistical information regarding prevalence and characteristics of bullying was take from the Lessne and Yanez (2016) report. The definition of bullying came directly from the local school district in conjunction with research-based definitions. Finally, the five intervention techniques came from the Rigby (2011; 2012; 2014) research. Following stage one the control participants again completed all instruments via the Qualtrics survey website. Control participants were also recruited at this time for a focus group discussion on bullying (Appendix D).

Stage Two. In stage two the intervention participants completed two missions in the game *Bully*. When students arrived at a lab on campus, they received a brief overview of the context of the game and were instructed to use the observation protocol while they play. Participants were asked if they were generally comfortable with video games, if they were, they started further along skipping the introduction and helpful mechanics, if not, they also completed

this short 5-6-minute section, which shows them how to control the player and the important information on the screen (e.g., the waypoint marker).

All participants played two missions: *Candidate* and *The Diary*. *Candidate* examines the topic of physical bullying and follows Jimmy as he works to help a student run for class president. Specifically, the player-controlled Jimmy as he attempts to defend Earnest during his election speech, ensuring the bullies do not interrupt the speech as they throw eggs. To do this, the player uses a slingshot to disrupt the bullies and allow Earnest to complete his speech. This mission was chosen to be first because it is early in the game (chapter one) and was mechanically easy for the participants to complete. The second mission entitled *The Diary* addresses relational bullying. In this mission Jimmy must help a Beatrice recover her personal diary before everyone finds out its secrets. To complete the mission, the player must find a way to return the diary before the students turn against the girl. This situation represents relational bullying because if the diary is not recovered, it will be used against the girl to exclude and mock her throughout the school.

Stage Three. In stage three, a second lesson was conducted where participants in the intervention group were instructed to reflect (Appendix G) on their first gameplay experience. Specifically, they were asked to discuss the realism of the bullying and interventions that they witnessed, and if those situations/actions would occur in actual K-12 schools. Following the discussion, the pre-service teachers were trained in how to use the observation protocol by watching a video of Bully gameplay and completing the protocol together as a class. To ensure that all students had access to the same knowledge the videos showed from the game were walkthroughs of the two missions they had already completed.

Stage Four. In stage four the intervention participants completed two missions in the game *Bully*. When students arrived at a lab on campus they were asked if that had any questions or needed any reminders about the game and how to play. If they needed reminders they were provided, if not, they got started playing.

All participants played two missions: *Jocks Challenge* and *That Bitch*. *Jocks Challenge* examines the topic of relational bullying. Specifically, Jimmy must solve the problem that only jocks are allowed in the gym. The participant controls Jimmy to work with Algie, Thad, and Bucky, to defeat the jocks in a game of dodgeball. If the pre-service teacher was successful Jimmy and his friends gained access to the gym and the jocks clubhouse. If they failed, Jimmy and his friends continued to be excluded from the Gym. The second mission, entitled *That Bitch*, explores verbal and physical bullying. Jimmy overhears Mandy verbally bullying Beatrice, and later finds out that Mandy has stolen her lab notes. The player will control Jimmy through the school to get a stink bomb (by verbally bullying another student) and plant it in Mandy's locker, causing a distraction to steal back the lab notes and return them to Beatrice. Following stage 4 the intervention group once again completed the four instruments.

Stage Five. In stage five, participants in the intervention group had one more opportunity to reflect through classroom discussion on the second gameplay and how a teacher should intervene in situations like the missions they completed (Appendix H). They also created a bullying vignette based on what they thought was the most prominent form of bullying that takes place in K – 12 schools while working with fellow students to determine the best intervention for the created scenarios. Finally, intervention participants completed all instruments, and were recruited to join a focus group (See Appendix D).

Table 1

Study Design

	Intervention	Control
Baseline Assessments	Consent Form Instrumentation: - *Pre-Service Teachers Knowledge & Attitudes Questionnaire* - *Bullying Self-Efficacy* - *Bullying Vignettes*	Consent Form Instrumentation: - *Pre-Service Teachers Knowledge & Attitudes Questionnaire* - *Bullying Self-Efficacy* - *Bullying Vignettes*
Stage 1:	Mini Comics Traditional Lesson	Mini-Comics Traditional Lesson
Assessment	N/A	Instrumentation: - *Pre-Service Teachers Knowledge & Attitudes Questionnaire* - *Bullying Self-Efficacy* - *Bullying Vignettes (Observation Protocol)* *Focus Group*
Stage 2	Overview of *Bully* and viewing of the introduction • *Welcome to Bullworth* • *This Is Your School* Play: *The Candidate* and *The Diary*	N/A
Stage 3	Reflection Training on observation protocol	N/A
Stage 4	Play: *That Bitch* and *Jocks Challenge*	N/A
Stage 5	Class reflection	N/A
Assessment	Instrumentation: - *Pre-Service Teachers Knowledge & Attitudes Questionnaire* - *Bullying Self-Efficacy* - *Bullying Vignettes (Observation Protocol)* -*Focus Group*	N/A

Data Analysis

Quantitative Questions

Question One: Is there a significant difference in defining the four characteristics of bullying between control and intervention groups?

Data to answer this question was gathered from the *Pre-Service Teachers Knowledge & Attitudes Questionnaire* (Appendix A). This questionnaire specifically asked an open-ended question to define bullying. These answers were coded using a scale of 1-4, where one point was added for understanding the different aspects of the bullying definition (intent, physical/emotional harm, repetitive or single significant act, imbalance of power), a perfect score being 4. The hypothesis was there would be no significant difference between the control group and the intervention group as this information is covered during the traditional lesson. Quantitative data for question one was entered into SPSS version 25. Data was then checked for normality, descriptive statistics were run, and follow up Wilcoxon Signed-Rank and Mann-Whitney-U tests were run to examine significance. Results can be found in Chapter Four.

Question Two: Is there a significant difference identifying and labeling incidents of bullying between control and intervention groups?

To analyze this question data was gathered from the *Bullying Vignettes*. Participants earned a point for correctly identifying situations of bullying and earned a point for correctly identifying the type of bullying that the vignette represented. The hypothesis was there would be a significant difference between the control group and the intervention group. Quantitative data for question two was entered into SPSS version 25. Data was then checked for normality, descriptive statistics were run, and follow up Wilcoxon Signed-Rank and Mann-Whitney-U tests were run to examine significance. Results can be found in Chapter Four.

Questions Three: Is there a significant difference in a pre-service teachers' ability to intervene with regards to bullying between control and intervention groups?

To analyze this question data was gathered from the *Bullying Vignettes* and the *Bullying Observation Protocol.* Data was coded based on the participants' response to the vignettes and the use of the observation protocol to describe an appropriate bullying intervention for both the victim and the bully, earning 1 point for a correct method. The hypothesis was there would be a significant difference between the control and the intervention. Quantitative data for question one was entered into SPSS version 25. Data was then checked for normality, descriptive statistics were run, and follow up Wilcoxon Signed-Rank and Mann-Whitney-U tests were run to examine significance. Results can be found in Chapter Four.

Questions Four: Is there a significant difference in a pre-service teacher self-efficacy between control and intervention groups?

To analyze this question, data was gathered from the *Bullying Self-Efficacy* assessment. The hypothesis was there would be a significant difference between the control and the intervention. Quantitative data for question one was entered into SPSS version 25. Data was then checked for normality, descriptive statistics were run, and follow up Wilcoxon Signed-Rank tests were run to examine significance within the groups. Change scores were calculated for both the intervention and control group, descriptive statistics were run, and Mann-Whitney-U tests were used to compare the results. Results can be found in Chapter Four.

Qualitative Questions

Question One: What characteristics of bullying do pre-service teachers define in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Data for this question was gathered from the *Pre-Service Teachers Knowledge & Attitudes Questionnaire,* traditional lesson warm-up (mini-comic), the traditional lesson exit

ticket, and the focus group. For the questionnaire participants were directly asked to define bullying, there answers were color coded looking for the four main characteristics of bullying. For the mini-comic each one was analyzed and sorted if the participant included characteristics of the bullying definition in their deception or description. The exit ticket was the back of the mini-comic and was used to determine if they participants after the traditional lesson was over adjusted their view on the most prevalent form of bullying and included specific characteristics from the bullying definition. The focus group questions were designed to see if participants could define the characteristics of bullying, what it would look like in schools, and intervention techniques. The audio transcripts were transcribed. A scissors sort technique was used on all data to identify the relevant data specifically pertaining to participant's ability to define the characteristics of bullying and how it has changed throughout the study by comparing the pre and post written definitions in relation to the mini-comics and the focus groups. Results can be found in Chapter Four.

Question Two: How do pre-service teachers determine if an incident is bullying in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Data for this question was gathered from the *Bullying Vignettes* and the focus groups. The vignettes specifically asked each participant to explain why they chose to identify the situation they were reading as bullying. The focus group specially asked how the participants could identify a situation as bullying. A scissors sort technique was used on all data to identify the relevant sections specifically pertaining to participant's ability to explain how they identify bullying and how it has changed throughout the process. This means that each one was coded to

determine if the participants used characteristics of bullying to identify the situation or not. Pre and post vignette responses were compared. Results can be found in Chapter Four.

Question Three: What bullying intervention methods do pre-service teachers' use in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Data for this question was gathered from the *Bullying Vignettes*, the traditional lesson warm-up (mini-comic) and the traditional lesson exit ticket, and the focus groups. For the vignettes the participants had to explain how they would intervene in the situation. This also follows for the mini-comic and the exit tickets; the participants were asked to state how they would intervene in the situation they created. A scissors sort technique was used on all data to identify the relevant sections specifically pertaining to which intervention methods they used and how their strategies. Specifically, each piece was coded to determine if the participants used traditional methods of discipline or not, and if there was a difference between the pre-and post-intervention tactics. Results can be found in Chapter Four.

Merging. Once both sets of data were analyzed certain quantitative results and qualitative results were brought together to answer the overarching ideas of the research and to determine if the data told a consistent story, as is consistent with convergent parallel design. Both sets of data from Question one provided a picture of how pre-service teachers define the charactritics of bullying before receiving any training and changes that occurred because of participation in the study. Specfically it looked to determine it the quatantiative and qualtative data were simliar while using the qualitative data to doucment a deeper exploration to what aspects of the defition to participant understand. Question two from both sets of data provided a similar picture, this time in terms of the identification of bullying and bullying behaviors. The

mergering sought to determine if the qunatiative and qualitavie data allgiend, and if it did not why might that of happened. Questions three from both sets of data explains how pre-service teachers intervened in cases of bullying, the qualiative data provides and important set of information in this merge as researchers can see how the partipacnats intervened not just that they did or did not. The ability to combine quantitative and qualitative data for these three focus items will be helpful for refinement of instrumentations and procedures moving forward. Question four is strictly qunatitative.

Conclusion

Given the severe and lasting effects of bullying, it is important for teacher education programs to provide effective training so that pre-service teachers will be prepared with sufficient knowledge and skills to deal with bullying situations effectively when they become full-time teachers. Therefore, this study was designed to examine the effectiveness of an intervention that used video games as a pedagogical tool in a teacher education program to support preservice teachers to learn about bullying. Specifically, this study focused on exploring if a video game intervention could assist a pre-service teacher's ability to define, identify, and successfully intervene in incidents of bullying. Chapter Four provides findings of this study.

Chapter 4: Results

This chapter covers the data analysis and results of the research questions. Furthermore, it is organized into four sections: (a) defining bullying; (b) identifying bullying; (c) intervention; and (d) self-efficacy. Each section first reports the quantitative results, followed by the qualitative findings. The merging of results, per convergent parallel design (Creswell & Plano Clark, 2010) and their significance is discussed in chapter five. Prior to running statistical procedures, the data was assessed for normality using the Shaprio-Wilk test, which is increasingly recommend over the Kolmogorov-Smirnov test because it allows for increased power with varied sample sizes (Ghasemi & Zahedaisl, 2012). When the quantitative results passed the assumption of normality, parametric tests were used. When conditions of normality were not met, non-parametric tests were used. Specifically, the Wilcoxon Signed-Rank test was used with paired samples (Beatty, 2018), while the Mann-Whitney-U test was used for independent samples (De Winter & Dodou, 2010).

Defining the Four Characteristics of Bullying

RQ1 (Quantitative): Is there a significant difference in defining the four characteristics of bullying between control and intervention groups?

RQ1 (Qualitative): What characteristics of bullying do pre-service teachers define in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Quantitative One

The maximum score a study participant could earn, demonstrating full definitional knowledge of bullying including intention cause physical or emotional harm, with an imbalance of power, and repetition, was four. A Shaprio-Wilk Test revealed both control and intervention

group data did not meet conditions of normality (control: W = .795, p. < .001; W = .764, p. < .001; intervention: W = .633, p. < .001; W = .831, p. = .001); therefore, non-parametric testing was warranted. A Mann-Whitney-U test indicated no significant difference in ability to define the four characteristics of bullying between the control and intervention groups at the start of the study (U = 238.5, p = .552).

Control Group. Table 2 presents the means, standard deviations, and standard errors for the (*N* = 25) participants of the control group. The Wilcoxon Signed-Rank test revealed no significant difference in the control group's ability to define the four characteristics of bullying after the traditional lesson was complete (Z = -.484, p = .629).

Table 2

Defining Bullying

		M	*SD*	*SE*
Control	Pre	1.60	.645	.129
	Post	1.68	.802	.160
Intervention	Pre	1.43	.506	.111
	Post	3.10	.768	.169

Intervention Group. Table 2 also presented the means, standard deviations, and standard errors of the intervention group participants (*N* = 21). The Wilcoxon Signed-Rank test showed a significant difference between the intervention group's ability to define the four main characteristics of bullying before and after the intervention (Z = 3.904, p. < .001).

Control Group VS Intervention Group. A Mann-Whitney U test revealed a significant difference in participants' ability to define the characteristics of bullying between the control and intervention group at the completion of the study (U = 61.5, p < .001; $\hat{p}_{C,I}$= .118).

Qualitative One

Control Group. As part of the initial instrumentation, the control group completed the *Pre-Service Teachers Knowledge & Attitudes Questionnaire* which specifically asked them to write down the definition of bullying, this happened prior to the traditional in-class lesson. After reading each response, terminology specific to each of the four characteristics of bullying were color coded, cut, and placed into new tables to determine which part of the definition the participants stated or missed. Because intent is a state of mind, it was coded for targeted behavior, "forcing someone, meant to harm, intentional." Phrases such as "being mean, calling names, teasing" were included in the category of emotional harm as these are commonly used colloquialisms for something that may inflict emotional harm. Regarding repetition, phrases had to specifically say more than once, repeated, over time to be included. Imbalance of power had to be explicit in stating there was an imbalance. Table 3 documents the number of students who used each characteristics of the definition before the traditional lesson. Examination of their answers showed that just under half the participants understood intent, most knew the act had to cause physical or emotional harm, only five mentioned repetition, and none included imbalance of power in their definition.

Table 3

Four Characteristics of Bullying: Control Group Pre-Definition Results

		N	*Percent*
Intent to Cause Harm	Pre	11	44
Physical or Emotional	Pre	20	80
Repetitive or Single Significant Incident	Pre	5	20
Imbalance of Power	Pre	0	0

Examples from participants' responses that document the control group's failure to understanding the characteristics of imbalance of power and repetition of events include "Bullying is when someone acts out any kind of attempt to hurt someone mentally, physically, or emotionally," "Targeting a student with hurtful words or actions," "I would define bullying as someone who is mean and puts others down. This can take any form of physical or verbal behavior that is negative," and "verbal of physical abuse to peers."

Control group participants created mini-comics during the warm-up activity prior to the traditional lesson. Specifically, they were instructed to draw a comic that depicted what they believed was the most prevalent form of bullying was, and how they would intervene. All the 25 participants completed this activity. Analysis of their work found only one student drew a physical bullying example. The other 24 participants were evenly split, drawing either a verbal/relational situation or a cyberbullying situation. All the drawings and explanations through word bubbling failed to disclose the intent/goal of causing harm towards the victim from the bully's side. Also missing is information whether the event took place more than once. Figures two and three are representative samples of the control group's comics production.

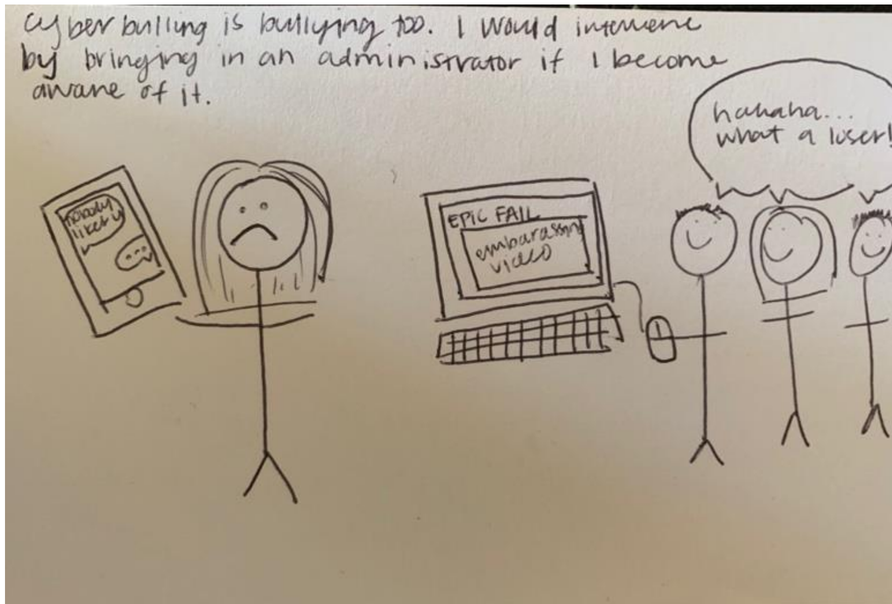

Figure 2. Control Group Traditional Lesson Mini-Comic One

Figure 3. Control Group Traditional Lesson Mini-Comic Two

After the traditional lesson, control group participants were asked to define bullying again. Careful analysis of these definition found some changes in participant understanding of the four characteristics of bullying. Six participants of the control group stated the need for an imbalance of power, compared to zero in their pre-definition. Six students included the need for

repetition in their definitions, compared to five in their pre-definition. Table 4 demonstrates the results of participants' post-definition results, along with their pre-definition results.

Table 4

Four Characteristics of Bullying: Control Group Post-Definition Results

		N	*Percent*
Intent to Cause Harm	Post	7	28
Physical or Emotional	Post	23	92
Repetitive or Single Significant Incident	Post	6	24
Imbalance of Power	Post	6	24

This slight growth in understanding is best documented by comparing specific individual participants' pre- and post- definitions. Initially one participant stated bullying was "the unfair treatment of one student by another, whether it be over race, religion, or anything else," while this participant's post-definition was "a student that wishes to cause harm whether physical, verbal, or social. Someone must have some upper power for it to be classified as bullying, it also must be repetitive." Similarly, another participant initially stated bully was "infringing on a student, repeated harassment," while this participant's post-assessment included "repetitive verbal/physical abuse towards a peer that has the intention to hurt, embarrass, or humiliate the other."

The control focus group conducted after the training, comprised of three participants, further illustrated some misunderstanding of the specific characteristics of the bullying. One participant of the focus group stated bullying was "a harmful incident, either through words or a

physical action that has the intent to harm someone in a way, especially if it's overtime." While this participant got close to all the four characteristics of bullying, they still failed to discuss the role of power imbalance. Similarly, another participant defined bullying as "any physical, verbal, social abuse that is directed towards an individual that is constantly occurring." This second participant also failed to articulate the need for intent to achieve a goal on the part of the aggressor and the need for an actual or perceived imbalance of power.

Intervention Group. The intervention group completed the same initial questionnaire as the control group. Their written definitions were coded in the same fashion. The results (Table 5) were like the control group, around half the participant's demonstrated intent, more almost all used physical or emotional harm, and no one talked about repetition while only three talked about imbalance of power.

Table 5

Four Characteristics of Bullying: Intervention Group Pre-Definition Results

		N	*Percent*
Intent to Cause Harm	Pre	12	57
Physical or Emotional	Pre	17	81
Repetitive or Single Significant Incident	Pre	0	0
Imbalance of Power	Pre	3	14

Responses clearly demonstrate their initial lack of understanding, missing the ideas of repetition and the need for an imbalance of power: "causing harm or distress to another purposely," "Bullying is when I person or a group verbally or physically makes fun of another person to

make them feel bad," "a person who attempts to establish fear into a weak minded individual," "having the intent to make others feel bad or unformattable without having a reason."

A review of the mini-comics, created by intervention participants at the beginning of the traditional lesson, showed many participants (12) viewed bullying though relational examples, some of which were in conjunction with cyberbullying (5), potentially inferring an intent to cause emotional harm. The other prominent depiction was cyberbullying (9), with three comics based on verbal bullying, and finally two with physical bullying. However, missing from these comics was documentation that the events were repetitive, they also lacked an actual or perceived imbalance of power. Figures four and five are representative samples of the intervention group's comics.

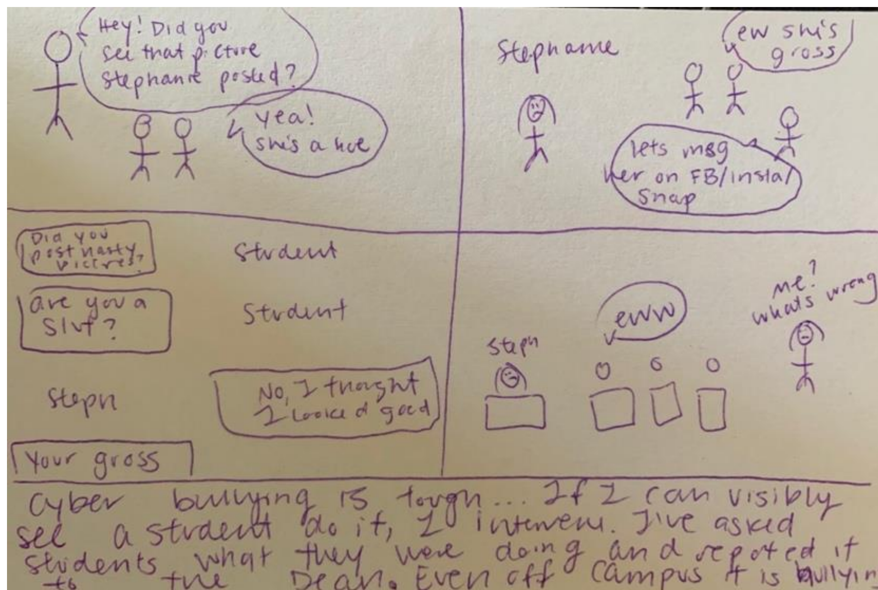

Figure 4. Intervention Mini-Comic Traditional Lesson One

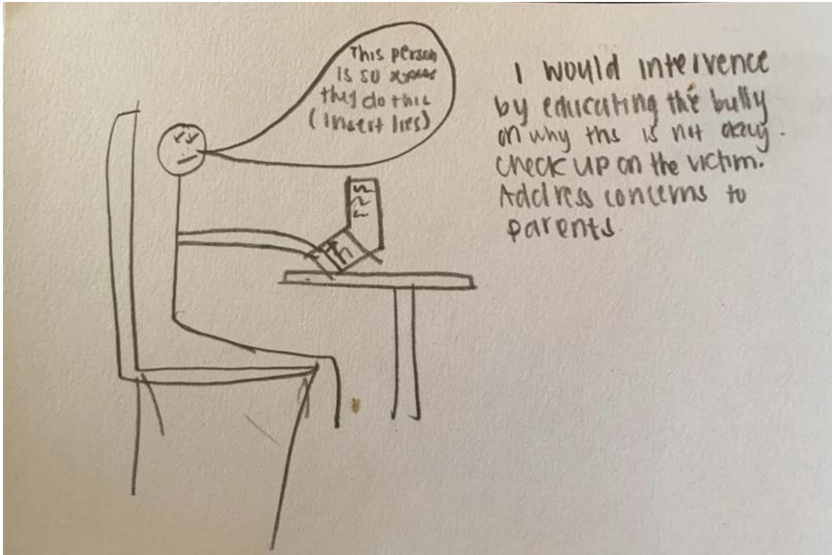

Figure 5. Intervention Mini-Comic Two

Following the intervention, the 21 participants were asked to define bullying again. These definitions displayed improved understanding of the four main characteristics of bullying. There was no change in the participants' use of the word physical, but five additional students understood emotional harm is also included in our understanding of bullying. Additionally, more than half of the participants now recognized the role of repetition and imbalance of power, as shown in Table 6.

Table 6

Four Characteristics of Bullying: Intervention Group Post-Definition Results

		N	*Percent*
Intent to Cause Harm	Post	11	52
Physical or Emotional	Post	19	91
Repetitive or Single Significant Incident	Post	14	66
Imbalance of Power	Post	15	71

Paring individual participants' pre- and post- definitions also help illustrates the improvement. Participant one initially stated "bullying is someone picking on another person because of their own insecurities, sometimes it's because of a need for control or dominance," while their post-assessment definition stated "bullying is something that is repetitive, has an imbalance of power, and is done to intentionally hurt someone either physically or mentally." A second participant initially stated, "bullying is intentionally disturbing someone in negative way to either in physical or verbal manner" their definition post-assessment stated, "an intentional, reoccurring or significant act of emotional or physical harm that is carried out due to a specific power struggle."

Four participants in the intervention group participated the focus group interview after the intervention. They provided definitions verbally that were close to similar to their post intervention written definitions when directly asked to define bullying. One focus group participant stated "bullying is, it needs to be an imbalance of power, it needs to be a repetitive pattern, and it needs to be intentional. And the different types of bullying are verbal, relational, cyber, and physical". A second participant noted after the first participant went that bullying "also has to be significant". The second member clarified further stating bullying "can be a pattern of behavior, or it can be one significant event". All four members of the focus group discussed the importance of three main characteristics of bullying, imbalance of power, repetition, and intent, but failed to specifically mention physical or emotional harm. It is possible the participants were so focused on the other three characteristic they missed the most common one based on the qualitative data.

Control Group VS Intervention Group. The initial written definitions for the both the control and intervention groups document similar deficiencies, the participants failed to understand that

bullying is a repeated event that is characterized by a perceived or actual imbalance of power. The post-assessment data documents a slight growth in the control group with a few participants documenting the need for repetition and an imbalance of power. But the data shows that there are many more members of the intervention group who are now able to successfully define the characteristics of bullying. The focus group again documents this by the control group failing once again to discuss an imbalance of power.

Identifying Bullying

RQ12(Quantitative): Is there a significant difference identifying and labeling incidents of bullying between control and intervention groups?

RQ2 (Qualitative): How do pre-service teachers determine if an incident is bullying in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Quantitative Question 2

The maximum score a study participant could earn through the identifying bullying vignettes (physical, verbal, relational, cyber, and non-bullying) was five. Additionally, the maximum score a participant could earn for successfully identifying the type of bullying was four. A Shapiro-Wilk test determined that both the control and intervention data failed the tests of normality (control: $W = .596$, $p < .001$; $W = .728$, $p < .001$; intervention: $W = .421$, $p < .001$; $W = .664$, $p < .001$); therefore, non-parametric testing was warranted. As shown in Table 8, a Mann-Whitney-U test demonstrated there was no significant difference in identifying or label bullying between the control and intervention groups at the start of the study.

Control Group. Table 7 presents the control group's means, standard deviations, and standard errors for identifying and labeling bullying.

Identification - A Wilcoxon signed-rank test was employed to test for a difference in participants' ability to identify bullying. Results indicated no significant difference in the control group's ability to identify bullying following the traditional lesson (Z = 1.213, p = .225).

Labeling - A Wilcoxon signed-rank test was used to determine if there was a difference in currently labeling situations of bullying. Results also indicated no significant difference in the control group's ability to label bullying at the conclusion of the traditional lesson (Z = 1.975, p = .073).

Table 7

Identifying and Labeling Bullying Means

		M	*SD*	*SE*
Control Identifying	Pre	4.72	.541	.108
	Post	4.52	.509	.102
Control Labeling	Pre	3.20	.645	.129
	Post	3.52	.585	.117
Intervention Identifying	Pre	4.87	.358	.078
	Post	4.47	.872	.190
Intervention Labeling	Pre	3.28	.643	.140
	Post	3.47	.601	.131

Intervention Group. Table 7 presents the intervention group's means, standard deviations, and standard errors for identifying and labeling bullying.

Identification - A Wilcoxon signed-rank test was used to test for a difference in participants' ability to identify bullying. Results indicated no significant difference for the intervention group in terms of identifying an incident as bullying after the intervention (Z = 1.725, p = .084).

Labeling - A Wilcoxon signed-rank test was used to test for a difference in participants' ability to label the bullying vignettes. Results indicated no difference between the intervention group's

initial and post assessments associated with determining which type of bullying each vignette depicted after the intervention (Z = .881, p = .801).

Control Group VS Intervention Group. A Mann-Whitney-U test was employed to assess control and intervention group differences, as related to identifying and labeling bullying through the vignettes. Results revealed no significant differences with either identifying or labeling between control and intervention groups at the conclusion of the study (see Table 8).

Table 8

Mann-Whitney-U Identifying and Labeling Bullying Results

	U	*p*
Control Identifying VS Intervention Identifying Pre-Assessment	238.5	.499
Control Identifying VS Intervention Identifying Post- Assessment	208	.145
Control Labeling VS Intervention Labeling Pre- Assessment	262	.990
Control Labeling VS Intervention Labeling Post-Assessment	252	.801

Qualitative Question 2

Control Group: The 25 control participants were asked to explain their reasoning for identifying the written vignettes as bullying or not from in both the pre- and post-assessment. The focus group was also asked how they can identify bullying in schools. This data answered qualitative research question two. The initial examination shows before the traditional lesson most of the participants decided a situation was bullying based simply on the negative behavior/actions of the bully towards the victim in the vignette, without considering the true definition of bullying. For example, in the relational vignette participants' reasoning included

identifying the event as bullying because "they were isolating a student," "this was shaming," "they were excluding," "this is intimidation," "bully was demeaning," "of a lowering social status (to create an imbalance of power)." All these reasons are relational, but they miss specifically identifying repetition, which was included in the vignette description. While the reasoning for the physical example included "the behavior was aggressive," "it was a physical assault," "it involved hitting," "they took the students belongings," "using force to steal," once again, the decision to label the event bullying was based on the specific activity, not the characteristics of bullying. Only two of the twenty-five participants discussed this situation as an imbalance of power, even though the vignette clearly states that the aggressor is perceived as more powerful.

In the post-assessment following the traditional lesson, new vignettes were used, but contained the same information as the originals with regards to intent, repetition and imbalance of power. Some control group participants began moving beyond simply seeing a negative behavior/action of the bully towards the victim and began thinking more about the characteristics of bullying. For the physical vignette, thirteen of the twenty-five participants discussed imbalance of power, repetition, and/or intent in their decisions to label an event bullying. Some statements were "It seems as though this action has occurred before and that the action was intentionally done to physically harm a student." "The fact that she says, 'I have had enough' means that this is a reoccurring problem." "probably repeated due to student's response." This rate of improved understanding remained consistent for the other vignettes as well. Reasons provided for labeling an incident bullying included "there is an imbalance of power, the student is forcing the other to give him homework answers through verbal threats," "no background info on repeated harm, can't determine," and "well even though there was no direct cause, it seems

like it might be repetitive." So, there is a change in why students identified events bullying, however, it does not show in the quantitative results.

After the traditional lesson, three participants participated the focus group discussion. In terms of identifying bullying in actual classrooms, one participant state that "I mean if it's physical you can potentially see bruises or cuts, some sort of physical mark that they've been injured." This was followed up with a comment on covert bullying by a different participant in the focus group:

> Being in the classroom. I know a couple students that are more ... their actions are more; they bully certain students. I'm trying to look at everyone and I see two students talking. I'm like, okay, are they having a conversation or is there some sort of bullying going on there? So, I feel for the teacher it would be so hard to establish exactly what is and isn't bullying. So, I would just say go figure out what they're talking about just to make sure that everything's okay.

The discussion moved to identifying verbal, relational, and cyberbullying based on a student's personality, "If something extremely has changed either their personality that I would notice in terms of if I'm the teacher in the classroom." No member of the focus group mentioned anything related to determining if an incident is bullying based on the four characteristics of bullying.

Intervention Group. The analysis shows that most of the 21 intervention participants labeled the initial written vignettes as bullying, similarly to the control participants. They read about an individual treating someone negatively and labeled it bullying without considering the four main characteristics of bullying. Specific examples include "The student physically assaulted the other student," "the student is being mocked online," "victim is being teased by lots of students," "it is name-calling," "the student smacked his head," "they were isolating the

student." However, two out of the group of twenty-one participants identified repetition and intent as factors in their descriptions of why incidents were bullying. Specifically, they wrote "this act is done repeatedly to intentionally hurt the student" and "there is an intent to hurt and shame another student, to make them feel less of themselves."

In the post-assessment the intervention participants, were asked once again to explain why they labelled a vignette bullying or not. Analysis showed that intervention participants were more likely to assess the bullying vignettes through the characteristics of bullying. For example, in the physical vignette repetition was identified by sixteen students using phrases such as: "this wasn't the first time this has happened between the student," " it was repetitive," "previous situations were noticed," "yes, because it has happened more than once," "it represented a consistent trend." Working with the relational vignette, the participants clearly understood the importance of imbalance of power before labeling a situation bullying, stating "there was a perceived power imbalance," "this is relational bullying, which consists of an imbalance of power," as well as "they were intentionally causing mental harm," and simply "there is an imbalance of power." Therefore, as with the control participants, even though there was no statistical difference between the pre-and post- assessments, participants in the intervention demonstrated improved understanding of the characteristics of bullying.

After the intervention, four participants attended the focus group discussion. When asked to identify bullying, one participant first responded with "physical apparent distress, I suppose." This was followed by a general discussion about understanding the students and their emotions, with one participant stating that "you have to be very observant of peoples' emotional state. It's not always obvious. It's not always crying, it could just be signs of discomfort, while they're

talking to somebody, you know?" A third participant brought up the sign of the physical space between the students

> I think another way that it could be shown is, when there are a lot of people around, perhaps there might be one person that seems to be singled out more than the others, or is kind of being shunned or turned away from others, so I feel like that's another key tell in if a person's being bullied.

Again, even though there were some valid and important points made in the discussion, the four participants did not relate their reasoning directly to the four characteristics of bullying.

Control Group VS Intervention Group. The pre-assessment written explanations regarding why vignettes were determined to be bullying for the both the control and intervention groups document similar deficiencies, the participants fail to determine the events were bullying based on the characteristics of bullying and not simply negative interactions. The post-assessment data documents growth in the control with more than half (13) of participants justifying their labeling of the event as bullying with the characteristics. The intervention group had all but four students use the characteristics of bullying to identify bullying and increase of approximately 25% as compared to the control group.

Intervening in Bullying

RQ3 (Quantitative): Is there a significant difference in pre-service teachers' intervention with regards to bullying between control and intervention groups?

RQ3 (Qualitative): What bullying intervention methods do pre-service teachers' use in the control and intervention groups, before and after the intervention? What differences exist between the control and intervention?

Quantitative Question Three

Participants had to explain how they would intervene in the given vignettes, having the opportunity to earn up to five points in both the pre and post assessment for their bullying intervention in five vignettes. Participants earned a point with the use of one of the six methods outlined by Rigby (2012): traditional discipline, strengthen the victim, restorative justice, support group method, model of shared concern, mediation. A Shapiro-Wilk test determined the control and intervention data failed the test of normality (control: $W = .752$, $p < .001$; $W = .729$, $p < .001$; intervention: $W = .729$, $p < .001$; $W = .713$, $p < .001$); therefore, non-parametric testing was used to compare the data. A Mann-Whitney-U test was used to compare the control and the intervention at the start of the study. Results indicated no difference between the groups ($U = 211.5$, $p = .211$).

Control Group. Table 9 reports the control group's initial means, standard deviations, and standard errors.

Table 9

Intervening in Bullying Means

		M	*SD*	*SE*
Control	Pre	4.32	.732	.136
	Post	4.44	.583	.116
Intervention	Pre	4.49	.691	.131
	Post	4.43	.597	.130

A Wilcoxon signed-rank test documented no significant difference between the control groups intervention for bullying following the traditional lesson ($Z = 8.21$, $p = .421$).

Intervention Group. Table 9 also reports the intervention group's means, standard deviations, and standard errors. A Wilcoxon signed-rank test found no significant difference between the intervention group's intervention for bullying before or after the study ($Z = .535$, $p = 593$).

Control Group VS Intervention Group. A Mann-Whitney-U test to compare the control and the intervention groups against each other determined there were no significant differences in the intervention of bullying ($U = 260.5$, $p = .906$).

Qualitative Question Three

Control Group. The 25 control participants were asked to explain how they would intervene in four bullying vignettes. The qualitative analysis of participant explanations regarding their approaches to intervention shows, the choice of their intervention methods may not lead to long term success in resolving the situation. Nearly all the responses followed traditional disciplinary methods for each vignette (Table 10). For example participants stated, "I would tell the student that he will be taken down to the office to discuss consequences for touching another student," "I would talk to the smacker and possibly send him/her to the office," "call home and give the student a week of lunch detention where he will learn about bullying and will write a letter of apology to the other student," "I would tell the bullies that that kind of talk towards another person is not acceptable in my classroom and the next time I hear it or hear of it they will be getting a privilege in the classroom taken away."

Table 10

Intervention Method: Control Group Pre-Assessment Vignettes

	Traditional	STV	Mediation	Restorative	Support Group	Shared Concern
Physical Vignette	22	0	0	1	0	0
Relational Vignette	21	0	0	0	2	0
Verbal Vignette	22	2	0	0	0	0
Cyberbullying Vignette	23	0	0	0	0	0

Notes: STV = Strengthen the Victim; Rows not equal to 25 mean failure of participants to intervene

There were three times where the participants understood the importance of follow-up, but only one case where the participant wanted to understand the goal and intent of the bully before deciding next steps "if the reason the student is demanding the other student's lunch is because he does not have a lunch of his own, I would make sure that he is able to get a lunch for himself." Two of the twenty-five participants did talk about using the whole class or a group of the class to share and understand the bullying problem, the participants did not have the vocabulary to clearly identify those methods specifically (but were scored in those categories in Table 10).

The post-assessment asked once again for the 25 control participants to explain how they would intervene in four bullying vignettes. The only difference this time is that for one of the vignettes (relational) the participants were presented with the *Bullying Observation Protocol*. Analysis shows traditional methods will still appear often in the control group's intervention, when they are not using the observation protocol (Table 11). Depending on the type of bullying, there was a moderate shift in how the control participants intervened. In the verbal vignette, fourteen of the twenty-five participants went straight to traditional intervention strategies. Others

began to think about the situation in a different light, giving responses such as “find the issue”, “get the bully tutoring”, “work with parents and talk to students about the issue.” When coding the physical vignette, a larger change in the control participants’ thought process regarding how to intervene is visible, with sixteen participants mentioning they have to figure out the intent of the bully illustrated by statements like “get to the bottom of it” “find out the history of the problem and then find ways to resolve the situation” “find the heart of the issue” “try to gather more information about the situation.” However, sometimes these phrases were still paired with traditional methods as documented in Table 11.

Table 11

Intervention Method: Control Group Post Assessment Vignettes

	Traditional	STV	Mediation	Restorative	Support Group	Shared Concern
Physical Vignette	13	0	0	3	1	0
Relational Vignette	2	0	4	5	3	8
Verbal Vignette	14	0	2	1	1	0
Cyberbullying Vignette	17	0	0	0	2	0

Notes: STV = Strengthen the Victim Rows not equal to 25 mean failure of participants to intervene

When using the *Bullying Observation Protocol* only two students decided that traditional discipline techniques would solve the situation. Eight of the students determined the method of shared concern was appropriate, while five selected restorative justice, four selected mediation, three selected support group, and finally three selected other. Participants were not specifically asked to explain their choice, but their reasoning to determine if the antecedent was encoded correctly on their choice of intervention creates a clear pattern. Participant statements included

"there was a power imbalance between the students," "the situation centered around social status," "exclude someone he deemed of a lower status level in order to maintain his own prestige," "alienate the student from their peers," "embarrass and shame," "isolated the victim." All the participants who recognized the goal of the behavior chose an intervention method based on working the students as a community.

Intervention Group. The 21 members of the intervention group were tasked with the same pre-assessment, explaining how they would intervene in the bullying vignettes. Their response mirrored the control group with most participants' initial explanations of how they would intervene in described bullying situations using traditional methods (Table 12). Intervention participants stated, "I would take away bonus of some sort i.e. free homework pass," "tell the kids to stop," "let the student move seats to wherever they wanted," "make the student apologize," "report the bully to the office/administration." Only one participant mentioned specifically finding out why the bully did what they did "does the bully have food insecurities?" While another participant, working on the relational bullying vignette, mentioned the need for some classroom group intervention. As with the control group, the intervention participants thought they had the skills to intervene in these initial vignettes 74% of the time.

Table 12

Intervention Method: Intervention Group Pre-Assessment Vignettes

	Traditional	STV	Mediation	Restorative	Support Group	Shared Concern
Physical Vignette	17	0	0	2	0	0
Relational Vignette	18	0	1	0	1	0
Verbal Vignette	18	0	0	0	0	0
Cyberbullying Vignette	17	0	0	0	0	0

Notes: STV = Strengthen the Victim Rows not equal to 21 mean failure of participants to intervene

The post-intervention assessment asked the intervention participants to explain how they would intervene in four bullying vignettes, one of which used the *Bullying Observation Protocol*. The results showed there was still some focus on traditional methods (Table 13), especially with the physical vignette. However, careful examination of the relational bullying vignettes presents a different picture. Twelve participants directly discussed the importance of understanding the overall problem and solving it as a social problem, “ask why this is happening,” and viewed solving the situation as part of a larger issue “find a compromise between the students,” “use mediation to ensure no parties feel at fault,” “work with the class to ensure all students feel included.” However, sometimes these phrases were still paired with traditional methods as documented in Table 12. While 83% of the participants rated themselves having the skills to intervene overall, cyberbullying was still a concern for 67% with participants making statements such as “wouldn’t know what I could do.”

Table 13

Intervention Method: Intervention Group Post-Assessment Vignettes

	Traditional	STV	Mediation	Restorative	Support Group	Shared Concern
Physical Vignette	16	0	1	1	1	0
Relational Vignette	3	0	0	13	5	0
Verbal Vignette	9	0	2	1	0	1
Cyberbullying Vignette	13	0	2	0	2	0

Notes: STV = Strengthen the Victim Rows not equal to 21 mean failure of participants to intervene

The intervention group had several opportunities to utilize the *Bullying Observation* Protocol throughout the study. All participants, except one, were able to detect there was an

imbalance of power, and that it was regarding to social status. Using this information, the intervention group labeled the goals of the bully as external in order to maintain status over the victim. Thirteen of intervention participants selected restorative justice as the proper intervention method, while five students selected support group, and three students selected traditional discipline. This documents at least for this one vignette that when the participant documented an understanding of goal of the aggressor, they were more likely to choose an intervention that might solve an overarching social issue.

Control Group VS Intervention Group. The pre-assessment written intervention strategies for the both the control and intervention groups document similar traditional intervention methods. The participants in both groups failed to understand the events were based on social constructs and require additional intervention. The post-assessment data documents that slight growth in the control with a few participants moving beyond traditional intervention methods. The data shows that there are a few more members of the intervention group who are now using different intervention methods focused on solving the problem. Both groups had promising results with the use of the *Bullying Observation Protocol* in their decisions on intervention methods.

Self-Efficacy

RQ(4) (Quantitative): Is there a significant difference in a pre-service teacher self-efficacy between control and intervention groups?

Quantitative Question 4

The data for this question was gathered from the *Bullying Prevention and Intervention Self-Efficacy Scale* designed to determine if there is a significant change in a pre-service teacher's self-efficacy between the control and intervention groups (Banas, 2014). Scores were calculated by totaling the self-reported scores from each of the four areas, with a range

of scores presented in parentheses: needs assessment (4 - 28), planning (3 - 21), implementation of bullying programs (7 - 49), and situational (5 - 35). The lower the number the higher the efficacy as the scale was constructed backwards. A Shapiro-Wilk test determined the all four subscales of the control and two of intervention data failed the test of normality (Table 14); therefore, non-parametric testing was used to compare within the groups.

Table 14

Shapiro-Wilk Test Results Self-Efficacy

		W_c	p_C	W_I	p_I
Needs Assessment	Pre	.746	<.001	.887	.019
	Post	.901	.019	.951	.354
Planning	Pre	.853	.002	.958	.468
	Post	.873	.005	.931	.145
Implementation	Pre	.794	<.001	.934	.168
	Post	.867	.004	.950	.346
Situational	Pre	.758	<.001	.762	<.001
	Post	.844	.001	.923	.102

Control Group. Table 15 outlines the means, standard deviations, and standard errors of the control group before and after the study. A Wilcoxon signed-rank test documented no significant difference between the control groups self-efficacy score after they completed the study for any of the four subscales (Table 16).

Table 15

Reported Self-Efficacy Scores Control

		M	*SD*	*SE*
Needs Assessment	Pre	5.72	2.94	.587
	Post	6.60	3.04	.608
Planning	Pre	6.80	3.96	.791
	Post	6.44	3.20	.640
Implementation	Pre	13.40	7.40	1.48
	Post	15.68	7.75	1.55
Situational	Pre	10.08	5.87	1.17
	Post	9.80	4.65	.929

Table 16

Wilcoxon Signed-Rank Test Change in Self-Efficacy Scores Control

	Z	*p*
Needs Assessment	-1.070	.285
Planning	-.349	.727
Implementation	-1.229	.219
Situational	-.169	.866

Intervention Group. Table 17 outlines the means, standard deviations, and standard errors of the intervention groups self-efficacy scores before and after the study. A Wilcoxon signed-rank test documented significant differences between the intervention groups pre and post-assessment self-efficacy scores on all four subscales (Table 18).

Table 17

Reported Self-Efficacy Scores Intervention

		M	*SD*	*SE*
Needs Assessment	Pre	7.28	2.94	.641
	Post	5.76	1.70	.371
Planning	Pre	8.67	2.67	.583
	Post	6.05	2.46	.536
Implementation	Pre	18.95	3.76	.821
	Post	13.14	3.08	.673
Situational	Pre	10.95	5.98	1.30
	Post	7.57	2.09	.477

Table 18

Wilcoxon Signed-Rank Test Change in Self-Efficacy Scores Intervention

	Z	*P*
Needs Assessment	-2.296	0.022
Planning	-3.077	0.002
Implementation	-3.93	0.000
Situational	-2.83	0.005

Control Group VS Intervention Group. To compare the control group and intervention group change scores were created by subtracting the pre-test and post-test scores, means standard deviations, and standard errors are presented in Table 19. Then four *Mann Whitney-U tests* were conducted for the subscales (Table 20). The tests documented significant difference in the changes scores for all four subscales.

Table 19

Self-Efficacy Change Scores Control and Intervention

		M	*SD*	*SE*
Needs Assessment	Control	.680	3.30	.660
	Intervention	-1.52	2.87	.627
Planning	Control	-.360	4.46	.892
	Intervention	-2.62	3.21	.701
Implementation	Control	2.28	9.19	1.83
	Intervention	-5.81	2.96	.655
Situational	Control	-.200	6.55	1.31
	Intervention	-3.38	6.12	1.33

Table 20

Mann -Whitney-U Tests Self-Efficacy Change Scores Control VS Intervention

	U	*p*
Needs Assessment	160.50	.024
Planning	169.00	.038
Implementation	80.00	.000
Situational	161.50	.025

Summary

The study provided both quantitative and qualitative results regarding the control and intervention participants' ability to define, identify, and intervene in bullying situations. It documented significant statistical differences between the control and intervention in their ability to define the four characteristics of bullying based on the pre-and post-assessment, the qualitative

data told a similar story. In terms of identification and intervening of bullying the qualitative data reveled no significant difference, which disagrees with the qualitative data, a further discussion of this finding and its implications presented in Chapter 5. The quantitative tests also documented significant growth among the intervention group in terms of self-efficacy. Additionally, when the intervention groups change scores are compared to the control group change scores all four subscales were significant. Chapter 5 presents a through discussion of the results, and their implications.

Chapter 5: Discussion, Implication, and Conclusion

This research study utilized mixed methods to explore the pedagogical potential of a video game as an intervention for pre-service teachers to learn about bullying prevention. Specifically, this study aimed to explore if the video game *Bully* plays a significant role in enhancing a pre-service teacher's ability and self-efficacy to define, identify, and successfully intervene in incidents of bullying. Chapter Four presents the quantitative and qualitative findings. This chapter merges the qualitative and quantitative data and identifies the extent to which using a video game as a pedagogical tool, in combination with traditional classroom methods, developed pre-service teachers' ability to define, identify, and intervene in bullying. Based on the findings, the chapter also includes a discussion of this study's significance considering relevant literature discussed in Chapter Two. Finally, this chapter concludes with implications for pedagogy and practice in preparing future teachers to handle bullying in K-12 contexts.

Research Question One: Defining the Four Characteristics of Bullying

Research question one sought to determine the role of the intervention on pre-service teachers' ability to define the four significant characteristics of bullying (intent, physical and/or emotional harm, imbalance of power, and repetition). This question was developed based on research, which demonstrated that both pre-service and in-service teachers have difficulties in defining the characteristics of bullying. Specifically, research found in-service and pre-service teachers are frequently inclined to simplify bullying to negative interactions between the aggressor and the victim, neglecting the core characteristics of repetition and an imbalance of power (Yoon & Kerber 2004; Bauman & Del Rio, 2006; Kahn, Jones, & Wieland, 2012; Lopata & Nowicki, 2014).

The pre-test assessment results of this study, for both the control and intervention groups, reflected this lack of sophisticated understanding of bullying among pre-service teachers. The qualitative data found that participants from both groups understood that there were factors of physical or emotional harm and that the act was generally intentional but failed to understand the existence of an imbalance of power and the need for the aggression to be a repeated event or a single significant incident. The quantitative data documented these misunderstandings as well, the initial control mean was 1.60, while the initial intervention mean was 1.43. If the participants were able to name all the four characteristics of bullying, they would be able to earn a mean score of 4. These initial results are consistent with previous studies, in that pre-service teachers who do not have bullying intervention/prevention training tend to miss the same two main characteristics of an imbalance of power and repetitiveness (Benitez, Garcia-Berben, & Fernandex-Cabexas, 2009, Hazler et al., 2001; O'Moore, 2000).

The post-assessment results revealed that only the intervention group had a statistically significant change in their ability to define the four characteristics of bullying as compared to the pre-assessment (p. < .001). Additionally, the intervention group's mean (3.10) was significantly higher than the control groups, which remained relatively unchanged at 1.68 ($p < .001$; $\widehat{p_{C,I}} = .118$). The effect size documents that the probability a random participant from the control group would have a higher score than the intervention group is 11.8% (Grissom & Kim, 2012). This shows that the intervention helped pre-service teachers in the intervention group define the characteristics of bullying well beyond those in the control group.

While the control group post-assessment qualitative data reflected some new understanding of how bullying is defined, only a few participants ($N = 6$) pointed out the need for repetition and an imbalance of power in defining bullying. However, the quantitative data

showed that this change was not statistically significant, suggesting that without proper training, growth in participants' ability to define bullying is limited. One class period of instructional delivery, without any pre-or post-engagement with the topic appeared to provide only limited opportunity for the participants to gain a full understanding of the concepts.

Conversely, the qualitative data demonstrated that the intervention group increased their understanding of the need for an imbalance of power (77% VS 24%) and repetition (61% VS 24%) as part of the definition. These results align with another study examining the effectiveness of a full semester course on bullying, where participants left with an expanded understanding of the four aspects of bullying (Benitez, Garcia-Berben, & Fernandex-Cabexas, 2009). The results from this study documented the measurable increase of pre-service teachers' knowledge. This may be attributable to the length of intervention, comprised of three additional course sessions (roughly 3 hours in total), each starting with students defining the characteristics, then using those definitions to explain why examples both student-generated and video game scenarios were or were not examples of bullying. These results demonstrate the intervention was successful in helping the pre-service teachers genuinely understand what bullying means within the context of K-12 educational settings.

The findings confirmed the assertion that repeated exposure to bullying information increases pre-service teacher understanding regarding the characteristics of bullying. The performance of the control group demonstrates a single session on bullying is not enough to help pre-service teachers define the four significant characteristics of bullying.

Research Question Two: Identifying Bullying

Research question two sought to determine the role of the intervention on the pre-service teachers' ability to identify incidents of bullying as well as labeling them according to their

classification (physical, verbal, relational, cyber). The quantitative results of the pre-assessment demonstrate that both the control and intervention groups can successfully identify and label incidents of bullying. Both the control and the intervention group scored high regarding identification, with means of 4.72 and 4.87. These high results indicated both groups successfully identified the four bullying vignettes and the one non-bullying vignette. As for labeling the vignettes by their classification, the means were also high, 3.20 and 3.28, documenting that most of the time, participants successfully labeled each type of bullying. This successful labeling of bullying goes against prior studies which showed participants had trouble labeling relational bullying (Byers et al., 2011; Kochenderfer-Ladd & Pelletier, 2007; Mishna, 2008;).

Although the quantitative results show that the pre-service teachers were able to accurately identify and label bullying, combining the quantitative results with qualitative data reveals a different finding. Qualitative data demonstrated that participants in both the control and intervention group explained their identification of the bullying event based on the negative interactions between the students. The participants failed to consider the four main characteristics of bullying, even though they were presented with them before the vignettes. To be specific, even though participants in the control and intervention group could accurately identify each type of bullying, they used false reasoning to determine if a vignette was bullying (i.e., “the student was being mean to him”). This important finding demonstrates that it is essential for researchers to ask follow-up qualitative questions to gather information specifically on what and why pre-service teachers are thinking and not merely take the quantitative results at face value.

The post-assessment quantitative data demonstrated that participants in both the control and the intervention groups scored as high as they did in the pre-assessment. Meaning that there were no statistically significant differences within the control and intervention group before and after the study, as well as no difference between the groups after the study. However, the post-intervention qualitative results show expanded understanding in the intervention group as compared to the control group, based on why they identified an event as bullying. Participants in the intervention group moved beyond simply labeling events bullying based on the adverse interaction to citing specific characteristics of bullying in their descriptions. Most of the control group participants, on the other hand, still focused solely on the negative interaction between the two students, except for the physical bullying vignette where 13 included specific bullying characteristics.

There are several possible reasons to explain why the quantitative and qualitative results tell different stories. First, participants in both groups were primed before the initial assessment; they knew the study was about bullying, they were given a definition of what bullying was (after they wrote their own), and the vignettes were concise. This is most likely the main reason why the identifying bullying scores were skewed in the initial assessment. Second, the vignettes often gave away some of the four critical characteristics of bullying in obvious ways, explicitly stating there was an imbalance of power or the event was repeated, instead of requiring the participants to discover those characteristics on their own. Therefore, it made it easier for participants, especially those in the intervention group, to spot key characteristics, making it clear it was in fact bullying.

However, the greater increase of intervention group participants using specific bullying characteristics as compared to the control group confirms that the intervention played an

important role in shaping the reasoning for identifying an incident as bullying. This is important because, in-service teachers are often, like pre-service teachers, quick to label negative interactions between two students bullying, without further consideration of the entire series of events that led to the negative interaction. This puts additional strain on administrative and guidance services, which by generally must conduct a full and lengthy investigation, where instead the in-service teacher could have handled the incident. This is where the *Bullying Observation Protocol* might help in-service teachers within the classroom because it explicitly reminds them of the four characteristics of bullying that they need to look for, an essential tool for successfully responding to these situations.

Research Question Three: Intervening in Bullying

Research question three asks if there are differences in how the control and intervention group respond to bullying incidents after the intervention. The quantitative data was designed to determine if the participants in the study would use an appropriate intervention tactic as defined by O'Moore, (2012) (traditional discipline, strengthen the victim, mediation, restorative justice, support group, shared concern). The pre-assessment data shows similar quantitative results concerning the intervention of bullying, by the control and intervention groups, with means of 4.32 and 4.49. These numbers being so close to five, the highest possible score, document almost all participants would intervene in the bullying incident using one of the outlined tactics. However, the quantitative results regarding intervening in bullying do not present a complete picture of how the participants would intervene in the situations. The pre-assessment qualitative data documents that the pre-service teachers failed to realize the social nature of bullying, based on how they identified situations of bullying "they were being mean", "didn't want him to attend the party." Because of this, the majority of participants in both control and intervention groups

relied on traditional disciplinary methods such as separating the students, sending them to the office, calling home, and detention, all directed towards the bully and failing to understand some attention must also be directed towards the victim to solve the overarching social problem. These results are consistent with a study using similar vignettes to have participants to explain how they would intervene in bullying situations (Bauman & Del Rio, 2006).

The post-assessment quantitative data shows no statistical difference between or within the control and intervention groups after the intervention was conducted. The qualitative data for the control group also remained the same; the pre-service teachers used traditional methods of discipline for the bully, in the three vignettes where the Bullying Observation Protocol was not used. There was one vignette where the control participants deviated from the use of traditional methods, when they were asked to use the *Bullying Observation Protocol*. When using the protocol, only two of the twenty-five students selected traditional methods, with the rest selecting methods that tried to address the entirety of the problem. These results are very promising, the control group had no training on how to use the form and after working through the prompts they decided that traditional discipline was not the way to solve the problem. This demonstrates that the *Bullying Observation Protocol* helps pre-service teachers think through the complexity of bullying situations.

The intervention group's post-assessment qualitative data shows more than half of participants demonstrated an understanding of bullying as a problem that requires something beyond traditional discipline methods in order to solve it effectively, except for the physical bulling vignette, where they choose to simply use traditional methods. The interventions chosen in the post vignettes for relational, verbal, and cyberbullying were focused on solving an overarching social problem. The participants chose methods beyond traditional discipline for the

bully, such as support group, method of shared concern, mediation, and restorative justice. This shows a deeper understanding by participants of the complex nature of bullying, realizing that traditional methods are only temporary solutions that could exacerbate the overall situation for the victim, as the research has previously noted. When the intervention group was presented with the *Bullying Observation Protocol* for use with the vignette, the pattern of selecting intervention methods designed to solve the overall problem was similar to the control group. Participants did not merely assign standard consequences such as sending to office, calling home, and detention, this time around. They focused their interventions on solving the issue with support groups, restorative justice, and similar methods.

These results are promising in two regards. First, for the intervention group, the post-assessment data shows more than half of participants expanded their understanding of additional intervention techniques (e.g., support group, restorative justice). This number might have been higher if the intervention included specific time to offer enhanced training and role-playing opportunities for the pre-service teachers to internalize each method. This additional training would help them feel more comfortable with the various methods, some of which were brand new to them. Secondly, the *Bullying Observation Protocol* increased use of intervention methods designed to solve problems (e.g., model of shared concern) not just punish the aggressor, in both the control and intervention groups. Future research should attempt to confirm if this increase in use of alternative interventions for both groups is a recurring trend, and how it can be brought in to the K – 12 schools.

Research Question Four: Self-Efficacy

Research question four sought to determine if there was a significant difference after the intervention between the participants' bulling prevention self-efficacy among the four subscales:

needs assessment (school wide surveys and statistics), planning, implementation (activities and lessons for students) and situational bullying (identifying, intervening, talking to victim/bully/bystander). The hypothesis stated that pre-service teachers' self-efficacy regarding all subscales would improve through simulating mastery experiences with a video game as a pedagogical tool within the teacher education classroom.

The pre-assessment results for the control and intervention group revealed that initially, both groups felt moderately efficacious among all subscales (Table 15 & 17). It is worth noting that other research studies (Boulton, 2014) have documented participants initially rating themselves having moderate to high efficacy for dealing with bullying; Gregus et al., (2017), noted that this higher efficacy is often due to overconfidence or naiveté with bullying.

The post-assessment results showed no significant changes in the control group's self-efficacy, among any of the four subscales (Table 15). However, there was a significant change in all four of the intervention groups subscales (Table 17). These results demonstrated that the intervention had a significant effect on the intervention groups self-reported self-efficacy. Additionally, the post-assessment results revealed that the intervention group had a significant change in their self-efficacy scores (they had greater change in their reported self-efficacy) when compared to the control groups change scores for all four sub-scales. This is vital because as Bradshaw et al., (2007) notes that teachers with higher bullying self-efficacy are more likely to intervene.

The quantitative results show that the use of a video game as a pedagogical tool within a teacher education classroom changed their self-efficacy. These findings align with other studies that have found targeted bullying training of pre-service teachers impacted their self-efficacy (Banas, 2013; Benitez, Garcia-Berben, & Fernandez-Cabezas, 2009). However, there is a glaring

difference between the two previous studies and the current one; both previous studies utilized an entire semester focused on bullying prevention training, while the current study only utilized part of a semester (4-5 hours of training in total) to achieve similar results. Additionally, the results of simulating mastery experiences through video games align with research documenting that video games serve as a vehicle to help research participants develop self-efficacy (Kato, Cole, Bradlyn, & Pollock, 2008; Rutledge, 2012; Sitznamm, 2011). The control group, who did not experience the video game, did not have statistical increase in their self-efficacy regarding situational bullying.

Implications

It is troubling that in-service and pre-service teachers alike frequently state their preparation programs did not adequately prepare them to handle bullying situations appropriately in K-12 contexts (Benitez, Garcia-Berben, & Fernandex-Cabexas, 2009; Byers, Caltabiano, & Caltabiano, 2011; Brennan, 2006; Mishna et al., 2005). This study found similar results, with members of the control and intervention groups overwhelmingly stating in their initial instrumentation they were currently unprepared to handle bullying (77%). This pattern needs to be corrected, and teacher educators need to ensure that bullying prevention and intervention is a topic that is discussed and explored within pre-service teachers' core curriculum. From the results of this study, it is worth noting that a single day of instruction and discussion is not enough time for pre-service teachers to grasp multifaceted complexity of bullying. Pre-service teachers need more intensive training to define bullying, understand the prevalence of bullying, the effects of bullying, how to identify of bullying, prevention strategies, how to deal with bullies and victims, and school policies (O'Moore, 2000).

Prior studies have shown the positive effect training has on pre-service teachers' ability to define, identify, and intervene in bullying, while improving their self-efficacy (Banas, 2013; Benitez, Garcia-Berben, & Fernandez-Cabezas, 2009). However, training in both these studies utilized an entire semester, specifically focused on the topic. It is interesting to note this current study had positive results while integrating the bulling content and training within a core course of teacher education curriculum for only three class sessions. This suggests that addressing the lack of training pre-service teachers receive does not need to be, as previous research indicates, an entirely new course, but can be integrated into existing course structures. This is positive news as the creation of courses within programs is often limited due to state licensing requirements. Teacher educators can work within their current courses, identifying appropriate placement of the bullying training and more seamlessly integrate content into the course curriculum. Additionally, findings suggest it would benefit K-12 administrators to provide their staff multiple opportunities for professional development opportunities in the area of bully prevention and intervention.

Self-efficacy gains through mastery experiences have the greatest power to change participant behavior. This research shows using a video game in the context of bullying prevention training is possible and should be considered as a pedagogical tool in the teacher education classroom. Teacher educators should continuously strive to use new approaches to tackle complex problems. Based on the enumerated limitations (e.g., lack of racial disparity, overexaggerating of stereotypes, lack of educator intervention), *Bully* might not be the game that teacher educators are looking for, but it demonstrates video games centered on bullying may help pre-service teachers in their journey to understand the complexities of bullying and increase their tools to help their future students.

This research showed that the *Bullying Observation Protocol* had initial success with participants based on their chosen intervention tactics, with only a few choosing traditional discipline methods. As this is the first use of the document, further research must be conducted to verify the results. Additionally, teacher educators should note that viewing bullying through social information processing as designed in the protocol helped the participants understand underlying issues between the aggressor and the victim, which should allow for more effective interventions. This is important because research has shown that when teachers intervene, they often make the problem worse for the victim (Bradshaw et al., 2007; Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Strohmeier & Noam, 2012)

Future research should focus on longitudinal studies, to determine if the increases in self-efficacy results in actionable intervention by observing preservice teachers in school contexts. Further, research should explore if the increase in pre-service teachers' ability of defining and identifying bullying in video games or vignettes can actually increase their ability to intervene in bullying situations in school contexts, and how does use of the *Bullying Observation Protocol* in actual bullying situations affect the long term intervention between the bully and the victim.

Limitations

The study has several limitations. The varying classroom experience (two semesters versus one) of the study participants created an initial discrepancy between the control and intervention groups. The control group was comprised of pre-service teachers enrolled in their first practicum course, while the intervention group was comprised of generally younger students, enrolled in an introductory course. Future studies should be mindful of securing participants at the same stage in their teacher education programs, to further refine the results of the intervention for better generalizations about its overall effectiveness. Additionally, future

studies should be designed to ensure the intervention and control group have the same amount of classroom time in order to better judge the use of the intervention video game.

Student diversity within the game *Bully* and the vignettes was nonexistent. This allowed for data to be collected using a uniform set of experiences, but it does not replicate the actual field experiences of pre-service teachers, which will be unique for each placement. Table 21 shows the 2018 – 2019 K-12 student demographics in the school district where most participants will have their practicum experiences.

Table 21

Enrollment Demographics 2018 – 2019

Race	Percent
Hispanic/Latino	46.4%
Caucasian	24.5%
Black/African American	14.1%
Multiracial	6.6%
Asian	6.4%
Hawaiian/Pacific Islander	1.6%
Native American	.4%

The use of the same game missions and vignettes has the potential to limit study participants' ability to transfer the skills they learned to actual field experience due to lack of student diversity. Additionally, the vignettes did not disclose any information regarding the specific agents (age, ethnicity, appearance) involved in the bullying situation. Future research should make sure to create vignettes that more accurately represent current student populations (e.g., census data-based proportions).

The vignettes were also simplistic (e.g., no personal attributes, concise obvious word choices, lack of overall back ground), allowing the participants to easily and quickly identify which type of bullying occurred in each one. Additionally, participants were primed by the instrumentation. This included a definition of bullying that was provided after an initial attempt to formulate their own. Follow-up studies need to explore at least the following two changes to gather additional useful data from the vignettes regarding the participants' ability to identify and label bullying. First, choosing specific times to gather data where students are not primed by the content of the research. Second, the utilization of far more detailed scenarios, this would include portraying a variety of negative student interactions and providing detailed biographical and situational information to assist participants' in the identification of bullying versus other negative student interactions. These expanded vignettes could prove extremely helpful with pre-service teachers in their intervention tactics, because they will have a deeper understanding of the characters and will be able to better evaluate the choices.

Finally, the video game *Bully,* while depicting several accurate portrayals of imbalance of power and some realism regarding specific situations of bullying, tends to exaggerate extreme stereotypes of bullying. It attempts to solve the situation in ways that lead to some inappropriate resolutions (e.g., fighting and stealing). While it does allow for shared classroom reflection, it may be more useful for researchers to build more focused simulations that can continuously be adjusted to meet the current trends in education.

Conclusion

Data shows bullying impacts at least one-third of K-12 students worldwide (Lessne & Yanez, 2016; Robers, Kemp, Rathbun, & Morgan, 2014; Seal & Young, 2003). With significant, often long-lasting effects (e.g., depression, suicidal thoughts, low morale, lack of respect), the

impacts of bullying affect all stakeholders (Brank, Hoetger & Hazen, 2012). Therefore, teacher educators must ensure that pre-service teachers are prepared to enter the classroom with a clear understanding of bullying and how to prevent it from happening. Current teacher preparation programs frequently fall short in this area (Benitez, Garcia-Berben & Fernandex-Cabexas, 2009; Brennan, 2006). For this reason, it is essential for teacher educators to create learning opportunities for pre-service teachers to develop both the skills and self-efficacy necessary to address bullying in K-12 settings.

This study sought to measure the effectiveness of using an off the shelf video game as a pedagogical tool for developing both pre-service teachers' understanding of the complex problem of bullying in the K-12 educational environment and self-efficacy for successfully intervening in bullying situations. Using instrumentation designed for this purpose, the study measured the pre and post understanding of two groups of pre-service teachers, those that utilized the game versus those that did not. The findings indicate the use of video games as a pedagogical tool may have real potential in the field of teacher education.

Overall, this study provides a clear picture of how video games can simulate mastery experiences that help pre-service teachers define, identify, and intervene in bullying as a more effective pedagogical tool than a traditional lesson on bullying. The limitations and implications serve as a guide for future research on using a video game to assist in the development of bullying prevention knowledge and efficacy. Researchers should take small steps forward with this research before full integration into teacher education curriculum, in order to better tune each aspect of the intervention (e.g., *Bullying Observation Protocol*). For example, research on creating and using detailed vignettes and understanding their impact would be beneficial before tying it in with the *Bullying Observation Protocol* or video game. This is also true for the design

and development of a new video game. It should be created and tested in a variety of settings to ensure it is delivering the content the researcher intends and should be examined by current in-service teachers to determine the authenticity of the generated bullying situations. Although many questions remain, the study demonstrates a video game can be a successful tool in the effort to ensure pre-service teachers are appropriately trained to enter the K-12 classroom with the mastery experiences they need to handle bullying.

Appendix A: Pre-Service Teachers Knowledge and Attitudes

Age: ___________

Sex: ___________

Do you identify yourself as belonging to any ethnic group if so, which? ___________

Current Year in School: _____________

Current Degree Program: ____________

Have you had any teaching experience? YES NO

If "YES", how many years? _________________

After your course, do you want to teach at school? YES NO

If "YES", in which school do you want to teach?

Elementary K-6 Secondary 7-12 Other: _____________

How would you define bullying? Please give your answer in a few sentences in the space below:

---

1) Have you ever been bullied when you were at school?

NEVER	OCCASIONALLY	SOMETIMES	FREQUENTLY
	(about 2 or 3 times)	(a few times each year, or often during one year)	(many times over several years)

2) Have the following people ever been bullied when they were at school?

Your sibling(s)	YES	NO	I don't have a sibling
Your child(ren)	YES	NO	I don't have a child

For the purposes of the remaining questions in this questionnaire, we define bullying as follows:

Bullying is a behavior which
(1) is an attack or intentionally causes harm
(2) is done in a physical or psychological way
(3) repeatedly (not once unless it is considered a significant event)
(4) with an actual or perceived imbalance of power

Questions about children who bully others: 'BULLIES':
Please answer for children at the age range you will teach (PRIMARY or SECONDARY).

3) About what proportion of school children do you think are BULLIES, during any school term?

4) What proportion of bullies do you think are BOYS?

5) Do you think that as children get older, from 5 to 16 years (circle one choice)
(A) they are more likely to bully other children
(B) they are less likely to bully other children
I there is no clear trend with age
(D) other (please specify ....)

6) Do you think these are common characteristics of BULLIES?:

Please choose a number as appropriate for each item:

3 = yes, often 2 = sometimes 1 = hardly never

(For example, please put a 1 by “physically strong” if you think this is hardly ever a characteristics of bullies.)

( ) physically strong ( ) physically weak
( ) has learning difficulties ( ) lacks social skills
( ) has a physical disability ( ) is hot-tempered
( ) is unassertive or passive ( ) has few friends
( ) is popular ( ) does poorly at school work
( ) has low self-esteem ( ) is always anxious

Comes from a family background which is characterized by:

( ) a lot of physical punishment ( ) inconsistent discipline
( ) very close relationships ( ) distant relationships
( ) over-protection by parents ( ) physical or emotional abuse
( ) nothing out of the ordinary in most cases

7) What proportion of bullies do you think get talked to by a teacher about it?

Questions about children who are bullied by others: ‘VICTIMS’:

Please answer for children at the age range you will teach (PRIMARY or SECONDARY).

8) About what proportion of school children do you think are VICTIMS of bullying, during any school term?

9) What proportion of victims do you think are BOYS?

(i.e. 0 = no boys, 100%girls; 50 = 50%boys, 50%girls; 100 = 100%boys, no girls)

10) Do you think that as children get older, from 5 to 16 years (circle one choice)

(A) they are more likely to be bullied by other children
(B) they are less likely to be bullied by other children
I there is no clear trend with age
(D) other (please specify……………………………..)

11) Do you think these are common characteristics of VICTIMS?:

Please choose a number as appropriate for each item:

3 = yes, often   2 = sometimes   1 = hardly ever

(For example, please put a 1 by "physically strong" if you think this is hardly ever a characteristics of victims.)

( ) physically strong   ( ) physically weak
( ) has learning difficulties   ( ) lacks social skills
( ) has a physical disability   ( ) is hot-tempered
( ) is unassertive or passive   ( ) has few friends
( ) is popular   ( ) does poorly at school work
( ) has low self-esteem   ( ) is always anxious

Comes from a family background which is characterized by:
( )a lot of physical punishment   ( )inconsistent discipline
( )very close relationships   ( )distant relationships
( )over-protection by parents   ( )physical or emotional abuse
( )nothing out of the ordinary in most cases

12) What proportion of victims do you think to talk to a teacher about it?

Concerning children's attitudes to bullying:

Please answer for children at the age range you will teach (PRIMARY or SECONDARY).

13) Some children dislike bullying, some are neutral about it, some say they could join in. What proportion of children do you think say they dislike bullying?

14) What proportion of children do you think say they could join in bullying?

15) Strategies for children to cope with bullying

Please answer for children at the age range you will teach (PRIMARY or SECONDARY).

Which strategies would you recommend to a child being bullied?

Cry			
Stand and take it	YES	SOMETIMES	NO
Ignore the bullying	YES	SOMETIMES	NO
Run away	YES	SOMETIMES	NO
Walk away calmly	YES	SOMETIMES	NO
Fight back	YES	SOMETIMES	NO
Tell the bullies to stop	YES	SOMETIMES	NO
Tell parents	YES	SOMETIMES	NO
Tell a teacher	YES	SOMETIMES	NO
Get help from friends	YES	SOMETIMES	NO

Questions about bullying in schools generally:

16) Do you think school bullying in this country is generally (circle ONE)?
(A) a very important issue
(B) a quite important issue
I not a very important issue
(D) of no importance at all

17) In what proportion of schools do you think bullying is a very serious problem?

18) In what proportion of schools do you think bullying is no problem at all?

19) If you were a teacher, do you think you would be able to do the following?

Definitely Yes = 1, Maybe Yes = 2, Neither Yes or No = 3, Maybe No = 4, Definitely No = 5

Identify situations of physical bullying.
Identify situations of relational bullying.
Talk with bullies without blaming them.
Make bullies stop bullying.
Talk with bullied students without attributing the cause of the bullying to them.
Support a bullied student.
Talk with onlookers about their responsibility.
Help onlookers take a more active role to support victims.
Work with parents of victims.
Work with parents of bullies.

20) Do you agree with each of these items?
Strongly Agree = 1, Agree = 2, Neither = 3, Disagree = 4, Strongly Disagree =5

Bullying others enhances pupil's self-esteem.
Being bullied helps to build a pupil's character.
Bullying is a natural part of growing up.
It makes me angry when pupils are bullied.
Pupils who are bullied should deal with it themselves.
Victims of bullying usually deserve all they get.

21) How valuable do you think each of the following is in a teacher-training
course?
No need at all = 1, Not very valuable = 2, Quite valuable = 3, Very Valuable = 4, Essential =5

How to find out the extent of the bullying
How to identify bullying behavior
How to talk with bullied students
How to talk with bullying students
How to talk with onlookers
How to develop a whole school policy on bullying
How to reduce school stress
How to improve the physical environment of the school to prevent bullying
Discussion of teachers' activities to intervene in and prevent bullying
Discussion of students' activities to intervene in and prevent bullying
How to work with parents of victims
How to work with parents of bullies

Appendix B: Bullying Prevention and Intervention Self-Efficacy Scale

Directions: The following questions ask you to consider the degree to which you feel confident about performing tasks related to bullying in your future classroom or school.

Indicate your agreement with the statements below using the following scale:

Agree: ___1__:___2__:___3__:___4__:___5__:___6__:___7___:Disagree

1. Work with other school personnel to address bullying
2. Design and develop curriculum for your classroom to address bullying
3. Select effective existing curriculum for your classroom to address bullying
4. Recognize and identify the characteristics and behaviors of different types of bullying
5. Teach students to recognize and identify the characteristics and behaviors of different types of bullies/bullying.
6. Teach students to describe the role of bystanders in preventing bullying.
7. Teach students the lasting effects of victimization.
8. Stop bullying when it is happening.
9. Deliver professional development workshops to school personnel to address bullying
10. Use technology to enhance student understanding of bullying
11. Create an open-door policy to discuss bullying with students.
12. Talk to the victims of bullying.
13. Host classroom meetings to discuss bullying with students.
14. Talk to students who you have witnessed bullying other students.
15. Respond to or locate resources to support student's and school personnel's general questions about bullying.
16. Advocate for bullying awareness and prevention in your school.
17. Use technology to communicate about bullying and bullying prevention.
18. Use facts and statistics to advocate for bullying and bullying prevention.
19. Successfully intervene in a case of bullying

Appendix C: Bullying Vignettes

Physical Bullying Vignettes

(Baseline) A male student has brought a large bag of fast food to school to have for his lunch. Another male student who is perceived as powerful goes over and smacks his head, demanding the food. The student refuses at first but eventually gives in.

(Following Traditional Lesson) You have directed the students in your class to work in groups of four. While they are getting into their groups, you see a female student push another female student with enough force that she falls to the ground. The push was clearly intentional and was not provoked. The student that fell yells, "This is over, I have had enough!"

(Following Intervention) The students are in the gym playing basketball after school assembly waiting for the bell to dismiss them. You directly witness students aggressively pushing a student out of the way each time he tries to get the ball. You remember seeing something similar during a soccer game during field day the previous week.

Verbal Bullying Vignettes

(Baseline) A student is repeatedly teased and called names by another, more powerful student. The more powerful student has successfully persuaded other students to do the same as much as possible. As a result, the victim of this behavior is feeling angry, miserable, and often isolated.

(Following Traditional Lesson) Your class is getting ready to go to an assembly. You hear a student say to another "Hey give me yesterday's answers or else." The student complies at once. Upon investigation, you learn that the student has been getting their homework from this student throughout the entire year.

(Following Intervention) A student is repeatedly called slang names referring to their sexual orientation by another student who is popular. You later find that students campaign posters for student body president written over to read "First Lady."

Relational Bullying Vignettes

(Baseline) When the pupils are sitting down for the lesson to start you overhear a pupil say to another pupil, "you cannot sit next to here it is saved for cool people." The victim walks away dejected while the perpetrator is laughing. This is at least the second time you have seen a scene like this between the students.

(Following Traditional Lesson) You have allowed the students in your class to have some free time because they have worked so hard today and completed most of their work. You witness a student say to another student, "No absolutely not. I already told you that you can't come to the party this weekend." The student than isolates themselves and sits alone for the remaining time with tears in his eyes. You learn after the weekend that "everyone" went to the part but the student you saw on Friday.

(Following Intervention) During a group project, you overhear a child student say to another, "If you do not let me have the purple marker, I will not invite you to my birthday party." It is not the first time this has happened.

Cyber Bullying Vignettes

(Baseline) You witness a group of children in the corridor just before your lesson looking at their cell phones and laughing. You overhear them mention a name of a person mockingly. You have witnessed similar situations before mocking the same person in the same way. When you ask the students why they are laughing, they hurriedly put away their phones and say nothing. The student who was being mocked seems very dejected today.

(Following Traditional Lesson) You witness a student look fearful as they look at their phone during free time. The student is then constantly looking over their shoulder, at a certain student, whom you have witnessed they do not get along.

(Following Intervention) A student approaches you with their phone and shows you an image of them passed out at a party in a suggestive position that is circulating the school via Snapchat. The students states he knows who took the picture and that it was done because the student was dating his ex-girlfriend.

Non-Bullying Vignettes

(Baseline) A male student is running down the hall frantically and while doing so bumps into a female student. The female falls to the ground and shouts an obscenity at the male student who continues to run down the hall not acknowledging what he just did. Upon investigation, you discover that the male student was running to the bathroom and this is the first incident between the two students.

(Following Traditional Lesson) For years, a student a has made fun of his best friend's student b's, peanut butter obsession. "You would eat my gym sock if it was covered in peanut butter,". One day in the science lab, the students designed mazes to test the intelligence of mice. When the teacher told the class that they would be baiting the mazes with peanut butter, the student called out, "Better be careful – student B might get to the end of the maze before the mice!" The other students broke out in laughter.

(Following Intervention) Two students are working at a science lab table, and one student knock over her water onto the other students work. The loudly shouts "you stupid idiot, how are you so dumb". You cannot recall and previous incidents between these two students.

Vignette Follow Up Questions

Follow up questions for each vignette

1. 1.Does this scenario constitute bullying? Yes or No

   Explain your reasoning:

2. If Yes Which Type of Bullying Is It?

   Physical Verbal Cyber Relational

3. How common do you think this kind of scenario is in schools?
4. I have the skills to intervene in this bullying situation.
5. If you were to intervene, what would you do?

Appendix D: Focus Group Questions

- How would you define bullying?
- Are there different types?
- What are the characteristics of bullying/bullies/victims?
- How can you identify situations of bullying as they are happening? Please provide examples.
- How would you intervene in bullying?
- What intervention method do you think works best for each type of bullying? Why?
- What would be the most challenging aspects when you deal with bullying in a real school context?
- What would you like to learn about bullying and bullying intervention in the future?
- Would you please talk about your overall experiences in the training? What elements in the training are most helpful? Why?

Appendix E: Bullying Observation Protocol

Aggressor(s) Name(s): ____

Victim(s) Name(s): ____

Part 1 Identification: Document any negative behaviors you witness from the aggressor(s) categorizing them as physical, verbal, or relational. Please also be aware that these behaviors could be used in combination.

Physical (e.g. hitting, pushing, kicking, destroying personal belongings, etc.)	Verbal (e.g. insults, teasing, demeaning language)	Relational (e.g. excluding, gossip/rumors, recruiting others to join in the exclusion)
Describe Behavior:	Describe Behavior:	Describe Behavior:
Time: Location:	Time: Location:	Time: Location:
Describe Behavior:	Describe Behavior:	Describe Behavior:
Time: Location:	Time: Location:	Time: Location:
Describe Behavior:	Describe Behavior:	Describe Behavior:
Time: Location:	Time: Location:	Time: Location:
Describe Behavior:	Describe Behavior:	Describe Behavior:
Time: Location:	Time: Location:	Time: Location:

Does an imbalance of power exist between the two (or more) students? Yes: _______ No: _____

If yes label potential imbalance:
Physical Social Status Privilege Other: ____________

How many times have you witnessed or heard of similar behaviors from the aggressor towards the student?

	Physical	**Verbal**	**Relational**
During the Current Semester			
During the Previous Year			

Part 2 Understanding:

<table>
<tr><td>Incident</td><td>Aggressor Viewpoint</td><td>Victim Viewpoint</td><td>Witness Viewpoint</td></tr>
<tr><td>What was the antecedent behavior that led to the incident?</td><td></td><td></td><td></td></tr>
<tr><td>Was the antecedent encoded and interpreted correctly?</td><td>______YES
______NO
_______Unclear</td><td>______YES
______NO
_______Unclear</td><td></td></tr>
<tr><td colspan="4"></td></tr>
<tr><td>What were the aggressor’s goals? (Internal, External, Unknow)</td><td colspan="3"></td></tr>
<tr><td>Did the aggressor anticipate a positive result?</td><td colspan="3">_____ Yes _______ No _______ Unclear</td></tr>
<tr><td>Has the aggressor previously used physical / verbal / or relational tactics to meet goals?</td><td colspan="3">_____ Yes _______ No
Number of times:
Physical ________ Verbal _______ Relational ________</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td>Interventions</td><td>For Aggressor</td><td colspan="2">For Victim</td></tr>
<tr><td>Antecedent was NOT encoded and interpreted correctly</td><td>______Connected Student with School Counselor
______Connected Student with School Psychologist
______Connected student with other support personnel</td><td colspan="2">______Connected Student with School Counselor
______Connected Student with School Psychologist
______Connected student with other support personnel</td></tr>
</table>

Antecedent **WAS** encoded and interpreted correctly	_______ Mediation _______ Restorative Justice _______ Support Group _______ Shared Concern _______ Disciplinary Action _______ Other:	Actively engage in strengthening victim (describe):
Week One Follow Up:		
Week Two Follow Up:		

Appendix F: Traditional Lesson Plan

Warm Up (15-20 minutes): Students will be given a blank piece of paper and asked to
a) draw a comic that depicts what they believe is the most prevalent bullying situation that takes place in K-12 schools.
b) explain how they would intervene

After the students have completed there will be a brief discussion where students will have an opportunity share their definition, situation, and course of action.

Lecture (5-10 minutes): Define bullying including the four classifications (physical, verbal, relational, and cyber).

Discussion Question (5-10 minutes): Which of the four classifications do you think occurs most often? Why?

Lecture (5-10 minutes): General prevalence of bullying using the 2015 National Center for Education Statistics (Lessne & Yanez, 2016) weighted results

Discussion Question (5-10 minutes): What are the characteristics of a student who is victimized by bullying?

Lecture (5-10 minutes): Characteristics of victims using the 2015 National Center for Education (Lessne & Yanez, 2016) weighted results

Include also identified students and LGBTQ students.

Discussion Question (5-10 minutes): What are the characteristics of a students who bully?

Lecture (10 -15 minutes): Bullies as individuals who bully to achieve a goal. Social information processing to explain one previous positive results with aggressive behavior. Include additional behaviors associated with SIP that can link to bullying

Lecture (15 minutes): What to look for (body language, non-verbal cues)

Lecture (20 – 25 minutes): Intervening in bullying five strategies. Not included is mediation, mention but point out issues.

Discussion (5 – 10 minutes): Which intervention tactics

Ticket to Leave (5 minutes): Revisit yours the situation you drew to start the day. Do you still think what you drew is the most prevalent situation in K-12 schools? What if anything would you do differently to intervene.

Appendix G: Intervention Bullying Lesson Plan

Warm-Up (15-20 minutes): Students will answer the following questions

a) What elements of the video game Bully do you think take place in K-12 schools?
b) What elements of the video game Bully do you think are overly exaggerated?
c) Do you think the game characterizes bullies and victims?
d) How would you have intervened if you were a teacher and those situations arise in your school.

After the students have completed there will be a discussion where students will have an opportunity share their views and opinions of the game and what they would have done if presented that situation.

Discussion/Lecture (20-30 minutes): Thoughts on the use of the bullying observation form. How does the form connect to the definition of bullying? How it could assist in helping identifying situations of bullying.

Gameplay Video and Discussion (25-30 minutes): Watch gameplay video of Bully and work together to fill out the bullying observation form.

Appendix H: Final Intervention Lesson Plan

Warm-Up (15-20 minutes): Students will answer the following questions

a) What elements of the video game Bully do you think take place in K-12 schools?
b) What elements of the video game Bully do you think are overly exaggerated?
c) Do you think the game characterizes bullies and victims?
d) How would you have intervened if you were a teacher and those situations arise in your school.

After the students have completed there will be a discussion where students will have an opportunity share their views and opinions of the game and what they would have done if presented that situation.

Activity (40 minutes): Students will be asked to create a situation that they believe is the most prevalent form of bullying in K-12 schools. The situations will be posted around the room. Students will then circulate the room and respond the situation using post-it notes with how they would intervene in the situation.

Ticket to Leave:

a) How has your knowledge of bullying changed from when the unit started
b) Do you think the video game was helpful in this change? Why/Why Not

Appendix I: Instrumentation Approval

Good Morning,

My name is Jeff Laferriere and I am a doctoral student at the University of Nevada, Las Vegas. I am working on putting a pilot study together that uses video games as an intervention for pre-service teachers to help them better understand, explain, and intervene when it comes to bullying.

I have noticed the questionnaire that was developed for your study *Knowledge and Attitudes About School Bullying in Trainee Teachers* was been cited a few times and I was hoping to gain access and granted permission to use it in my upcoming study.

If you have any questions please let me know

Jeff Laferriere
Teacher Education Doctoral Student
University of Nevada, Las Vegas

Peter Smith <p.smith@gold.ac.uk>
to yuichi, me

3/16/17

Dear Jeff

Attached -you are welcome to use/amend, with due acknowledgment.

Peter Smith

____

Peter K Smith (Emeritus Professor)
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Good Afternoon,

My name is Jeff Laferriere and I am a doctoral student at the University of Nevada, Las Vegas working on creating a bullying intervention for pre-service educations. I was hoping to get permission to use/adapt the self-efficacy instrument you used in you articles regarding authentic learning exercises.

Thank your for your time.

Jeff Laferriere

Banas, Jennifer <j-banas@neiu.edu>
to me

3/31/17

Hi Jeff

Sure thing! Thanks for checking with me. Just be sure to cite me! Was the whole instrument in the article? I can't recall.

Jen

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Curriculum Vitae
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EDUCATION

2019 (exp) Doctor of Philosophy
Teacher Education
University of Nevada, Las Vegas

2013 Certificate of Advanced Graduate Studies
K-12 Curriculum Administration
Plymouth State University

2010 Master of Arts
Education & Human Development: Educational Leadership & Administration
George Washington University

2007 Bachelor of Arts
Secondary Education: Mathematics
Arizona State University

TEACHING EXPERIENCE

University of Nevada, Las Vegas
Las Vegas, Nevada

01/2018 – 05/2018: Teaching Assistant
- Preparing Teachers to Use Technology (Undergraduate Major Couse; Online & Face-To-Face)

05/2016 – 07/2016: Teaching Candidate Supervisor (Rebel Academy)
- Supervised/Advised six pre-service teachers in accelerated in-class training program

08/2015 – Present: Graduate Assistant
- Instructor of Record:
    - Introduction to Secondary Education (Undergraduate Pre-Major Course; Online & Face-To-Face)
    - Teaching Elementary Mathematics (Undergraduate/Graduate Major Couse)
    - Teaching & Learning Secondary Education (Undergraduate Major Couse)
    - Elementary & Intermediate Algebra (Undergraduate Pre-Major Course)

Merrimack Valley High School

Penacook, NH

08/2007 – 07/2013 Mathematics Teacher

ADMINISTRATIVE EXPERIENCE

Hillsboro-Deering Middle School
Hillsborough, NH

08/2013 – 06/2015 Assistant Principal

Merrimack Valley High School
Penacook, NH

08/2012 – 07/2013 Mathematics & World Languages Area Coordinator

PUBLICATIONS

McCreery, M.P., Schrader, P.G., Krach, S.K., **Laferriere, J. R**., Bacos, C. A., & Fiorentini, J (under review). Examining designed experiences: A walkthrough for understanding video games as performance assessments.

McCreery, M.P., Krach, S.K., Bacos, C. A., & **Laferriere, J. R**. (accepted). What's in a game? Understanding video games as transactional learning experiences.

Laferriere, J. R., McCreery, M. (2017) Examining the efficacy of a bullying prevention video game: An intervention for pre-service teachers. In M. Pivec, & J Grundler (Eds) *Proceedings of the 11th European Conference on Games Based Learning.* (pp. 952-954). Reading, UK: Academic Conferences and Publishing International Limited

Riddle, D., Hayden, S., **Laferriere, J. R.**, Plachowski, T. J., Beck, J. S., & Metcalf, K. (2017). *The Nevada teacher workforce: An initial examination.* University of Nevada, Las Vegas. Las Vegas, NV

CONFERENCE PRESENTATIONS

McCreery, M. P., Krach, S. K., Bacos, C. A., & Laferriere, J. (2018, August). *Effectiveness of a forced-choice video game as a direct assessment of aggression.* 2018 American Psychological Association Convention, San Francisco, CA.

McCreery, M. P., Laferriere, J., Bacos, C. A., & Krach, S. K. (2018, April). *Video games as a model for assessing learning behaviors*. 2018 American Educational Research Association Annual Conference, New York, NY.

McCreery, M. P., Bacos, C. A**., Laferriere, J**. & Krach, S. K. (2018, April). Video games as performance assessments: How executive functioning influences the learning process. 2018 American Educational Research Association Annual Conference, New York, NY.

Bacos, C. A., **Laferriere, J**., McCreery, M. P. (2018, February). *Game-Based Models in Education: The Democracy of Creating Shared Experiences*. Research paper presented at the 98th Annual Conference of the Association of Teacher Educators, Las Vegas, Nevada

Laferriere, J., McCreery, M. (2017, October) *Video Games as an intervention for pre-service educators with regards to bullying.* Poster presented at the annual European Conference on Games Based Learning, Graz, Austria.

Laferriere, J. (2017, February). *Technology education and human computer interaction: A fresh approach.* Research paper presented at the 97th annual Association of Teacher Educators, Orlando, Florida.

Zhang, S., **Laferriere, J.**, Hayden, S. (2016, February) *Case studies in developing doctoral students' professional identity through self-analysis and communities of practice.* Lecture presented at the annual Ethnographic & Qualitative Research Conference, Las Vegas, Nevada

Martin, J., **Laferriere, J.** (2014, December) *Twitter as a professional development tool.* Lecture presented at annual New Hampshire Christa McAuliffe Technology Conference, Concord, New Hampshire.

SERVICE

Reviewer

- American Association of Colleges for Teacher Education Annual Meeting, 2017 - 2019

PROFESSIONAL ASSOCIATIONS

American Research Education Association: Division K
Association of Teacher Educators