PRE-SERVICE SPECIAL EDUCATION TEACHERS' FREQUENCY OF OPPORTUNITIES TO RESPOND IN THE TEACHLIVE™ VIRTUAL CLASSROOM

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DEDICATION

For Farhad, my sister Kristina and my parents; whose love has surrounded me during this entire journey.

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ABSTRACT

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The purpose of this study was to evaluate the effect that the TeachLivE™ virtual learning environment had on improving use of instructional strategies among pre-service special education teachers; in particular, it determined how often pre-service special education teachers provided opportunities to respond. Secondly, the purpose was to investigate the efficacy of post-session, after-action review as a tool for preparing new teachers. Lastly, this study focused on the perceptions of pre-service special education teachers' experiences within the TeachLivE™ virtual learning environment on teaching practices.

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CHAPTER I

INTRODUCTION

Background and Need for the Study

Expectations for schools of the 21st century are characterized by increased standards of teacher performance, an atmosphere of accountability, continuous improvement in teaching methods, and a teacher's enhanced content knowledge of the subject she or he teaches (Cavanaugh, 2013; Collet, 2012). The No Child Left Behind Act (NCLB) of 2001, placed an emphasis on teacher quality, bringing the quest to accurately assess and improve education to the forefront (USDOE, 2011a). Improving teacher preparation programs is a common goal in American schools, as there is a growing need for teachers who can work effectively with students who have disabilities (Beare, Marshall, Torgerson, Tracz & Chiero, 2012).

Along with issues of educator quality and background, there is also a need to reduce attrition, the rate at which a teacher leaves the profession, particularly for novice teachers. Billingsley (2004) noted 98% of school districts in the United States reported shortages of special education teachers, and that 37% of those hired for special education classrooms begin with less than full special education licensure. Adding to the growing rate of teacher attrition are individuals with little initial special education preparation who are more likely to quit than their experienced counterparts (Ingersoll, 2001). Special education pre-service teachers often have limited exposure to students with disabilities

during their education program (Lee, Patterson, & Vega, 2011), and report minimal teaching experiences within general education classrooms. In fact, a 2006 national teacher survey of 1,001 Kindergarten-12th grade first-year teachers across the United States indicated that one in five teachers did not feel adequately prepared to maintain order in the classroom (Dieker, Hynes, Hughes, & Smith, 2008). Other studies in the United States indicate between 25-50% of novice teachers resign during their first three years of teaching (Fletcher & Barrett, 2004; Voke, 2002). Challenges to prepare effective teachers in today's schools, especially in critical shortage areas such as special education, exist today.

Learning to teach is a complex undertaking and quality teacher preparation is a common goal within universities (Gore, 2001; Britzman, 2003; Cochran-Smith, 2003; Darling-Hammond & Bransford, 2005; Fontaine, Kane, Duquette, & Savoie-Zajc, 2012; Loughran, 2006; Levine, 2006). Personnel within teacher preparation programs typically examine a variety of outcome variables associated with effective teacher performance and assess pre-service teachers' knowledge and instructional experiences in order to deliver instruction that broadens and enhances teaching skills (Lee, Patterson & Vega, 2011). Substantial pre-service practicum experiences are essential for the preparation and retention of special educators (Connelly & Graham, 2009) and while many gain these experiences through on-site practicum and student teaching placements, such experiences may not always provide a teacher the opportunity to gather student feedback.

A virtual learning environment is defined as the combination of real and virtual worlds, providing users with a sense of presence (Straub, Dieker, Hughes & Hynes, 2014). One such virtual learning environment is TeachLivE™. TeachLivE™ offers pre-service teachers the opportunity to learn teaching skills and craft their practice in a safe environment, utilizing simulated avatar students (Dieker, et al., 2008).

Virtual learning environments such as TeachLivE™ can offer supplemental experiences for pre-service teachers to practice teaching skills in a low risk environment by offering a unique setting to experience various student characteristics and learn about specific teaching approaches. Depending on the specific objectives of the desired experience, the behavior of the virtual students can emulate typical developing student behavior or atypical developing student behavior. In this virtual environment, pre-service teachers interact with the virtual students and review previous work, present new content to students, and provide scaffolding or guided practice in a variety of content areas to monitor students while they work independently (Dieker, Rodriguez, Lignuaris/Kraft, Hynes, and Hughes, 2014). Dieker et al. (2014) suggested that virtual environments such as TeachLivE™ "allow individuals to have repeated (teaching) trials involving high stakes situations without risking the loss of valuable resources (e.g., money, time, and people)" (p.22).

Specific teaching skills, such as providing opportunities to respond, can be developed within the TeachLivE™ virtual learning environment. Learning how to provide opportunities to respond is vital for pre-service teachers to learn and practice, as

it is an indicator of effective instruction, improved student achievement, as well as improved student performance and behavior (Carnine, 1976; Sutherland, Wehby, & Copeland, 2000; Sutherland & Wehby, 2002; Sutherland, Wehby, & Yoder, 2002). Teachers who give students sufficient opportunities to respond elicit more feedback from students and can therefore adjust instruction based on student understanding in order to maximize student achievement (Sutherland & Wehby, 2001).

TeachLivE™ can also provide the opportunity for specific after-action review (feedback). After-action review is a method for improving the quality and clarity of instruction and has been employed in numerous research studies (Gilbertson, Witt, Singeltary & VanDerHeyde, 2007; Colvin, Flannery, Sugai & Monegan, 2008; Rathel, Drasgow & Christly, 2008; Britton & Anderson, 2010; Kretlow & Bartholemew, 2010; Scheeler, Ruhl & McAfee2004; Trautwein & Ammerman, 2010; Capizzi, Wehby & Sandmel, 2010; Collet, 2012; Evans, Williams & Metcalf, 2012; Hattie, 2012; Ostrosky, Mouzourou, Danner & Zaghlawan, 2012;). After-action review allows for pre-service special educators to contextualize experiences which will create opportunities for the construction of beliefs and practices grounded in teaching experiences, as well as solidify and deepen understanding of skills used in the teaching profession (Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005). Additionally, after-action review improves instruction as pre-service special education teachers observe their results and evaluate their effects on student outcomes (Collet, 2012). This in turn creates opportunities for the construction of beliefs and practices to be grounded in teaching

experiences as opposed to relying on theoretical pedagogy alone. Through after-action review, pre-service special education teachers have the opportunity to deliberate and reflect upon their teaching practices including the frequency of how often they give students the opportunity to respond.

Pre-service special education teachers can benefit from support during the process of improving teaching practices. As universities prepare pre-service special education teachers to meet the demands of teaching students in classrooms of their own, faculty need to gauge how well they are preparing candidates to teach all students within the classroom (Taylor & Ringlablen, 2012). Utilizing the TeachLivE™ virtual learning environment during pre-service special education teacher preparation can serve as an efficacious tool for teachers to practice methods such as providing opportunities to respond and allowing for a systematic process of after-action review to improve upon specific teaching practices, prior to trying them out in a real-world classroom setting.

Statement of the Problem

The ability to meet higher expectations for teacher performance is developed through strong preparation in pre-service special education teacher programs. Novice special educators with strong pre-service classroom preparation are more likely to remain in the field as opposed to those who do not have these types of experiences (Connelly & Graham, 2009). Strong preparation that encourages instructional change requires not only awareness of context and teaching practices but also an understanding of the varying contexts involved in the construction and appropriation of knowledge (Collet, 2012).

This preparation also has the potential to heighten initial effectiveness and increase the likelihood of novice teachers staying on the job long enough to become more experienced and effective (Darling-Hammond, 2010). Therefore, constructing pre-service teaching experiences utilizing the TeachLivE™ virtual learning environment, combined with a focus on opportunities to respond and specific after-action review, has the potential to benefit pre-service special educators by teaching the use of effective classroom methods more effectively.

Purpose of the Study

The purpose of this study was to evaluate the effect that the TeachLivE™ virtual learning environment had on improving use of instructional strategies among pre-service special education teachers; in particular, how often pre-service special education teachers provided opportunities to respond. Secondly, the purpose was to investigate the efficacy of post-session, after-action review as a tool for preparing new teachers. Lastly, this study focused on the perceptions of pre-service special education teachers' experiences within the TeachLivE™ virtual learning environment on teaching practices.

Research Questions

1. How does time in the TeachLivE™ virtual learning environment impact pre-service special education teachers' frequency of providing opportunities to respond?

2. How does time in the TeachLivE™ virtual learning environment coupled with after-action review impact pre-service special education teachers' frequency of providing opportunities to respond?
3. How do pre-service special education teachers perceive experiences within the TeachLivE™ virtual learning environment in regards to how it impacts their teaching practices?

After-action review serves as the independent variable for participants within the treatment group, and the TeachLivE™ virtual learning environment serves as the dependent variable for all participants. Social validity measures included responses from participant self-reflections as well as pre- and post-data from the *Teacher Sense of Efficacy Scale*.

Definition of Terms

For the purposes of this study, there are several key terms that should be defined for the sake of clarity:

Adequate yearly progress (AYP) is defined by proficiency standards or target goals, which are reported within achievement data for all students within a school. For schools to meet the standards of AYP, (a) at least 95% of enrolled students participate in state testing programs, (b) all students and all subgroups (economically disadvantaged, racial/ethnic subgroups, students with disabilities, and students with limited English proficiency) score at least at the level of proficient of the state's AYP targets for that

year, (c) all students and all subgroups meet AYP targets for graduation or attendance (Yell, Katsiyannis & Shiner, 2006).

After-action review (feedback) consists of a professional conversation discussing participant success, as well as areas of needed improvement for future performance. It requires direct information regarding the accuracy of the performance of the setting in order to enhance and maintain behavioral changes, and provides an opportunity for individuals to reflect on whether interim objectives were accomplished, questions what lessons can be drawn from past experiences, and evaluates how these lessons can be quickly internalized to improve performance (Gilbertson, Witt, Singeltary & VanDerHeyden, 2007; Baird, Holland & Deacon, 1999).

Mixed-reality (virtual learning environment) is defined as the combination of real and virtual worlds, providing users with a sense of presence. Mixed-reality environments enable participants to perceive a virtual environment as authentic, much like the real world (Straub, Dieker, Hughes & Hynes, 2014).

Opportunities to respond (OTR) refers to providing a verbal prompt or question with the intent of evoking an academic response (Cavanaugh, 2013). Examples of opportunities to respond include: 1) Verbal – individual questioning or choral responding; 2) Non-verbal – actions such as response cards/systems, movement activities/signaling, guided notes, or computer assisted instruction; 3) Individual – by oneself; 4) Group – with others, allowing for everyone to be engaged (Sutherland, 2000).

Pre-service teacher is defined as any individual who is being educated and/or trained prior to entering into service as a teacher. Pre-service teachers are typically completing required coursework, practicum, and other program specific requirements prior to completion of a teaching degree leading to teacher certification.

Self-efficacy is the belief in one's personal capabilities and is developed through experience, including experiences of mastery of a task, social persuasion, identifying with another seen as competent in the area, and personal feeling of competence of the individual (Bandura, 1997; Klassen, 2004).

TeachLivE™ is defined as a mixed-reality, virtual learning environment that provides participants the opportunity to learn teaching skills and craft experiences during the learning process, while incorporating components of personalized learning. TeachLivE™ offers pre-service teachers the opportunity to become immersed in an environment in which everything looks like a typical classroom, including props, whiteboards, and simulated students (Dieker et al., 2014).

Teacher attrition refers to the number of teachers who leave full-time teaching in the preschool, primary and secondary sectors of education through causes such as death, retirement, resignation, dismissal, temporary withdrawals, and resignation within education (Williams, 1979).

Teacher self-efficacy is a judgment of a teachers' capabilities to bring about desired outcomes of student engagement and learning, including students who may struggle and is defined as feelings of personal competence for teaching in a classroom in

which all students, regardless of ability, are educated together in common educational contexts (Andrews & Lupart, 2000; Tschannen-Moran & Woolfolk-Hoy, 2001).

Technology enhanced learning refers to the implementation of technological tools that facilitate pre-service teacher experiences in real classroom environments through observation or simulated learning environments. Benefits associated with technology enhanced learning include: a) exposure to various teaching/learning environments, b) creation of shared experiences, c) promoting reflectivity, d) preparing students cognitively, and e) learning about technology integration (Hixon & So, 2009).

This inquiry is organized into five chapters, with the first chapter providing an overview of the study. A review of current relevant literature comprises chapter two. Chapter three provides the research methodology for the study. Chapter four specifies the results of the data analysis. Finally, chapter five summarizes the research findings, draws conclusions from these findings and provides recommendations for research, policy, and practice.

CHAPTER II

LITERATURE REVIEW

In order to fulfill legal obligations under the No Child Left Behind Act (NCLB) of 2001 and Individuals with Disabilities Education Improvement (IDEIA) Act of 2004, educational leaders must ensure that a highly qualified special education teacher is available for every student who receives special education services (Thornton, Peltier, & Medina, 2007). Under NCLB, students with disabilities are included and now accountable for academic achievement (Shippen, Flores, Crites, Patterson, Ramsey, Houchins, & Jolivette, 2011). Laws and related court cases have clearly established a legal obligation to provide a free and appropriate public education for all students.

It is essential to create pathways for pre-service special education teachers to develop skills and master content so they can effectively teach diverse groups of students, including those receiving services in special education (Payne, 2005; Burton & Pace, n.d.). With education reform that is characterized by increased standards and higher expectations for teacher performance, teachers are being asked to improve their educational practices including methods, pedagogy, and content knowledge (Cavanaugh, 2013).

The purpose of this literature review is to investigate current research related to pre-service special education teacher preparation, primarily within the areas of after-action review, opportunities to respond and the TeachLivE™ virtual learning

environment. The process used to locate articles for the purpose of this review included a systematic search of online databases including the Texas Woman's University's libraries, Google Scholar, and ProQuest. Search terms included: *after-action review, attrition, augmented reality simulation, opportunities to respond, pre-service special education, self-efficacy, teacher preparation, TeachLivE™ and virtual classrooms*. An ancestral search was also conducted of bibliographies of selected articles in order to broaden the literature reviewed.

The results of the literature search are presented in eight categories of relevant literature for the purpose of this review: (a) special education teacher shortage and attrition, (b) special education teacher preparation, (c) teacher self-efficacy, (d) opportunities to respond, (e) after-action review, (f) self-reflection, (g) technology enhanced learning and (h) TeachLivE™. Each of these categories is presented to inform the purpose of this study: to evaluate the effect of the TeachLivE™ virtual classroom on pre-service special education teachers as well as to measure the frequency that opportunities to respond are provided within the virtual classroom.

Special Education Teacher Shortage and Attrition

The shortage of well-qualified special education teachers has been described as severe, chronic, and pervasive, and efforts to increase numbers of qualified special education teachers have largely been ineffective in the past two decades (Boe & Cook, 2006; McLeskey, Tyler, & Flippin, 2004). In combination with drastic reductions in school-based funding and growth in class sizes, special educators may seek balance

between the demands of high stakes testing and accountability. Many school districts find it difficult to fill positions that require special education certification (Payne, 2005; Ashby, 2012). Continuing explanation of factors with possible influence on teacher shortage and attrition include absence of certification, adequate yearly progress (AYP), and novice teachers.

Absence of Certification

The number of special education teachers without certification is a continuing trend as indicated by the U.S. Department of Education (1993, 2003). In fact, data revealed that at the beginning of the decade of the 1990s, approximately 9% of all special education teachers of students' ages 6 to 21 were uncertified and continued to increase through the mid-to-late 1990s. By 2002-2003, the percentage of uncertified special education teachers had risen to just over 12%. In 2002-2003 this translates to more than 49,000 special education teachers, serving approximately 830,000 students with disabilities who were not fully certified in their primary teaching assignment.

This shortage of certified teachers in special education is more severe than in general education. Boe & Cook (2006) indicated the shortage of special educators was from 20% to 30% greater than the shortage of certified general education teachers. Furthermore, the special education teacher shortage remains pervasive across all geographic areas of the United States and across all disability categories (McKleskey et al., 2004).

Adequate Yearly Progress (AYP)

Many schools fail to meet state mandated AYP standards ("2012 State Summary," 2012). For example, Texas Education Agency (TEA) statistics from 2012 indicate that 27.7% of school districts in Texas met annual AYP requirements. As schools fail to meet AYP possibly because of increased demands on special education populations and as increased pressures are placed on educators to meet the demands of NCLB, an increase of special education teachers request to transfer to general education positions or leave the profession (Thornton, Peltier, & Medina, 2007).

When looking at the student population, the growing diversity of student demographics has exacerbated the special education teacher shortage. According to (McKleskey et al., 2004), the demand for special education teachers for students with disabilities has tripled in size in comparison to the demand for general education teachers over the past twenty years, and that trend is expected to continue. Although the current reforms outlined in NCLB addressed the importance of highly qualified teachers to work with students with disabilities, the act was silent regarding how districts and states should recruit competent teachers (Allbritten, Mainzer & Ziegler, 2004).

Novice Teachers

Because novice teachers are much more likely to resign than their experienced counterparts, increasing teacher retention remains important not only because of the difficulty of finding teachers to replace those who have left but also because attrition affects the quality of instruction in general (Ingersoll, 2002; McLesky & Billingsley,

2008). When teachers new to the field leave before developing a solid repertoire of research-based teaching practices, students are exposed to a "continual parade of ineffective teachers" (Darling-Hammond, 2003, p. 9).

Nationally, as many as 40% of new special education teachers choose to leave their careers within the first 3 years of teaching and first year special educators are 2.5 times more likely to leave their job than their peers in general education (Billingsley, 2004). Compared to the estimated attrition rate of all public school teachers (i.e. 25.5%), special education teachers appeared to have a greater turnover (Smith & Ingersoll, 2004). Attrition was most severe in urban and rural schools, where there were higher percentages of minority students, many who lived in poverty (Ingersoll, 2003). Connelly and Graham (2009) noted in a survey of 456 special education teachers that 63% of the teachers who reported leaving special education left education entirely, while the remaining 37% moved to another position in education.

High levels of teacher attrition can reduce the quality of instruction and interfere with the efforts of school and program development. Darling-Hammond (1999) reported when teachers are well prepared in both content and pedagogy, "it makes an enormous difference not only to their effectiveness in the classroom, but also whether they're likely to enter and stay in teaching" (p.16). The destabilizing effect of high levels of teacher attrition on school and program development include reduction of services and increased caseloads for remaining teachers, increased search, hiring, and induction cost, and

reductions in the incorporation of research-based practices and collaborative relationships (Benner, 2000; Billingsley, 1993; Billingsley, 2005; Hope, 1999).

Special Education Teacher Preparation

Faculty in teacher education departments are challenged to sufficiently prepare high-quality teachers who can work effectively with all students while simultaneously raising the achievement for all students (Beare, Marshall, Torgerson, Tracz, & Chiero, 2010). Overall, the increasing diversity within special education (notwithstanding inclusion in general education classrooms), requires that all teachers acquire skills to teach students with a range of learning needs, including students with disabilities (King-Sears, Carran, Dammann, & Arter 2012).

Universities need to prepare pre-service special educators to effectively teach students with disabilities by providing ample experiences to do so. In 2001, the NCLB Act required new teachers in core academic areas to be highly qualified by 2003, and all teachers in core academic areas to be highly qualified as of 2006 (Boe & Cook, 2006; McLeksky & Billingsley, 2008). Data regarding the preparation of special education teachers in content areas revealed a striking lack of preparation, as most special education teachers failed to meet the highly qualified criteria (Boe & Cook, 2006; McLeksky & Billingsley, 2008).

Boe and Cooke (2006) examined the amount of teacher preparation, teaching position, and teacher qualifications of 44,896 public school teachers. Their study revealed, between the year 1987 and 2000, twelve percent of special education teachers

were uncertified as compared to 4% of general education teachers. Of the total number of special education teachers who were graduates with extensive teacher preparation, 35.9% of them were only partly certified in all of their teaching requirements. Further, Billingsley, Fall, and Williams (2006), surveyed 372 special education teachers who taught students identified as having emotional/behavioral disturbance (E/BD). Their findings indicated 83.91% of those teachers were not fully certified as special education teachers, and 10.36% of that population held emergency teaching certification. A small percentage of those teaching in grades 6 through 12 held certification in core academic areas as defined by NCLB: 3.1% in arts, 0.3% in foreign language, 14.5% in social studies, 2.3% in science, 2.5% in mathematics, and 9.4% in English. Thus, the study revealed that a majority of the secondary teachers in the study were lacking certification in both special education areas and content areas.

Katsiyannis, Zhang, and Conroy (2003) indicated each year colleges and universities graduate approximately 22,000 special education teachers, a number that falls short of the demand to fill in existing and emergent teaching vacancies. Although at the beginning of each school year, the majority of the public schools open special education teaching positions are filled, personnel who are not fully certified in special education filled many of these positions (Katsiyannis, Zhang, & Conroy, 2003). At the beginning of the 1999-2000 school year, almost 97% of all school districts reported at least one teaching vacancy in the field of special education, with a total of 69,249 job openings nationwide (U.S. Department of Education [DOE], 2002). Bergert and Burnette (2001)

estimated 98% of school districts reported shortages of fully certified special education teachers; teachers who were not fully certified filled 33,000 special education positions and 4,000 remained vacant altogether. Meeting special education teacher preparation challenges often relies on the quality of training the pre-service special education candidate teachers receive as well as a teacher's ability to put learned skills into practice (Bergert & Burnette, 2001).

Teachers with advanced preparation in teaching methods and strategies have a greater chance of survival in the classroom (Ingersoll, Merrill, & May, 2012). The extent to which beginning educators feel prepared to teach students with disabilities impacts the quality and quantity of instruction that students with disabilities are likely to receive (King-Sears, Carran, Dammann, & Arter, 2012; Dieker, Hynes, Hughes, & Smith, 2008; Lee, Patterson, & Vega, 2011). Therefore, it is imperative that programs deliver quality opportunities for preparation methods and development to adequately prepare pre-service special education teachers (Garland, 2012).

Teacher Self-Efficacy

Bandura's research (1982, 1997) denoted self-efficacy as the concerns and judgments of how well one executed courses of action required when confronting prospective situations. Self-efficacy, developed through experience, included experiences of mastering a task, social persuasion (where others tell an individual that he/she is good at something), identification with another seen as competent in the area, as well as the variable emotional and physiological state of the individual (Klassen, 2004).

A teacher's self-efficacy is defined as a belief or judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated (Armor, et al., 1976). It is defined as one's feelings of personal competence for teaching in a classroom in which all students, regardless of ability, are educated together in common educational contexts (Andrews & Lupart, 2000; Tschannen-Moran & Woolfolk-Hoy, 2001).

Beliefs and personal attitudes shape who teachers are as individuals and the types of decisions they make in the classroom. On a daily basis, teachers' attitudes influence a school's social environmental factors (Kaufman & Ring, 2011). Teachers' sense of efficacy have been connected to student outcomes such as achievement, motivation, and students' own sense of efficacy (Anderson, Greene, & Loewen, 1988; Armor, et al., 1976; Ashton & Webb, 1986; Midgley, Feldlaufer, & Eccles, 1989; Moore & Esselman, 1992; Ross, 1992;).

Teachers' belief of efficacy is also related to their behavior in the classroom. Efficacy affects the effort they invest in teaching, the goals set, and levels of aspiration. Teachers with a strong sense of efficacy tend to exhibit greater levels of planning and organization, are more open to new ideas, and more willing to experiment with new methods to better meet the needs of students (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Guskey, 1988; Stein & Wang, 1988; Allinder, 1994). Beliefs in personal efficacy influence teachers' persistence when things do not go smoothly and their resilience when faced with setbacks.

An expectation of efficacy is the individual's conviction that he or she can orchestrate the necessary actions to perform a given task, while the outcome expectancy is the individual's estimation of the likely consequences of performing that task at the expected level of competence (Bandura, 1986). Educators who have high self-efficacy beliefs are educators who strongly believe their instructional actions will lead to desired educational outcomes for the learning of students with disabilities (King-Sears, Carran, Dammann, & Arter, 2012). Novice teachers are more likely to view students with disabilities in a negative manner and perceive them as less likely to achieve high educational standards than their experienced counterparts (Mariano-Lapidus, 2013).

Woolfolk-Hoy and Spero (2005) suggest that pre-service preparation experiences were key to the development of teacher efficacy, that is, teachers' confidence in producing positive student learning (Gao & Mager, 2011). For individuals to gain proficiency or to perform a task, they must first develop the requisite skills to successfully complete the task and possess confidence to effectively use these skills (Burton and Pace, n.d.). Teachers with a higher sense of self-efficacy exhibit greater enthusiasm for teaching, have greater commitment to teaching, and are more likely to continue teaching (Allinder, 1994; Guskey, 1984; Hall, Burley, Villeme, & Brockmeier, 1992; Coladarci, 1992; Evans & Tribble, 1986; Trentham, Silvern, & Brogdon, 1985; Burley, Hall, Villeme, & Brockmeier, 1991; Glickman & Tamashiro, 1982).

It is possible that once pre-service teachers have increased knowledge of effective instruction teaching students with disabilities and feel more confident in their teaching,

their levels of self-efficacy levels will increase. However, as Forlin and Chambers (2011) pointed out, it is necessary for university teacher preparation programs to provide the skills and strategies that enhance personal efficacy and enable pre-service special educators to teach students with disabilities effectively.

Opportunities to Respond

An important component of effective instruction is giving students frequent opportunities to respond during lessons. When teachers increase their rates of opportunities to respond, student on-task behavior and correct responses increase, while disruptive behavior decreases (Sutherland, Alder, & Gunter, 2003; Sutherland & Wehby, 2002; West & Sloane, 1986). When pre-service special educators are taught and given ample time to practice teaching strategies, such as providing opportunities to respond, it is more likely that students will benefit in learning and the longevity of special education teacher's careers will increase due to improvement in student behaviors.

Cavanaugh (2013) reported, further corroborating Simonsen, Myers, and DeLuca's (2010) evidence, when teachers created opportunities to respond, they increased the likelihood of desired responses from students whether the teacher incorporated strategies of presentation materials, asked questions, or corrected student answers. Increased opportunities to respond improve student engagement with academic tasks, decreased problem behavior, and improved student achievement (Haydon, Conroy, Scott, Sindelar, Barber, & Orlando, 2010; Stichter, Lewis, Whittaker, Richter, Johnson, & Trussel, 2009; Sutherland, Alder, & Gunter, 2003). However, students who were at a

greater risk for academic failure often did not receive adequate opportunities to respond in the classroom (Stichter , Lewis, Whittaker, Richter, Johnson, & Trussell, 2009).

According to the Council for Exceptional Children (1987), when learning new material teachers should strive to obtain a minimum of 4-6 responses per minute with 80% accuracy. If activities involve review of previously learned material, teachers should strive for 8-12 responses per minute with 90% accuracy. In addition, when students are engaged and actively responding to questions, teachers can focus on academic content rather than being concerned with inappropriate student behaviors. Increasing the focus on academic content was particularly important for teachers who instruct students with or at-risk for emotional or behavioral disorders, who were more likely to engage in inappropriate behaviors than their typically achieving peers (Haydon, Conroy, Scott, Sindelar, Barber, & Orlando, 2010).

Opportunities to respond are amenable to ongoing measurement and performance feedback (Cavanaugh, 2013). In a study conducted by Haydon, Mancil, and VanLoan (2009), a student in a 5th grade classroom served as the target subject and was selected due to episodes of chronic disruptive behavior within the classroom. During the baseline phase of data collection, the median percentage of the student's on-task behavior was 34.15% before the intervention of opportunities to respond. Her on-task behavior increased to 67% during intervention, which included the teacher increasing rates of opportunities to respond. During the second withdrawal condition, the median percentage of on-task behavior decreased to 38%. It was found that this particular

student clearly benefited when the teacher increased or maintained high rates of opportunities to respond during instruction.

Sutherland (2003) observed nine students, ranging in age from 8 to 12 years, who were previously identified by their school as qualifying for special education services as having emotional disturbance. During observation of the students' class, frequency counts of the teacher asking a question (providing an opportunity for student response) were recorded. During the baseline phase, the mean rate of the teacher providing opportunities to respond per minute was 1.68, and this rate increased to 3.52 per minute during the first intervention phase. During the withdrawal phase, the teacher's mean rate of providing opportunities to respond decreased to 2.23 per minute, and during reintroduction of the intervention, the rate increased to 3.49 per minute. At the conclusion of this study, Sutherland (2003) reported when the teacher increased opportunities to respond, the students were more engaged with the material, had more time due to on-task behavior and reduced disruptive behavior, along with an increase of correct responses.

Providing students frequent opportunities to respond is important as increased student responding is linked to on-task behavior and engagement during instruction (Haydon, Mancil, & Van Loan, 2009). Increased rates of responding and the subsequent rates of improvement in learning tend to increase the amount of material that can be taught. When teachers increase their rates of opportunities to respond, student on-task behavior and correct responses increase while disruptive behaviors decrease. In addition, obtaining frequent responses from students provides continual feedback for teachers'

regarding student learning and the effectiveness of instructional activities. Further, the more time students spend involved in learning activities, the more they learn (Haydon, Mancil, & Van Loan, 2009).

Successful classroom management maximizes the likelihood of student participation, active responding, and correct responding while minimizing errors. A connection exists between effective instruction and increases in desired student behaviors and decreases in undesired student behaviors and suggest that content knowledge and pedagogical preparation are important for teachers (Brownell, Ross, Colom, & McCallum, 2004; Haydon, MacSuga-Gage, Simonsen, & Hawkins, 2012). Most classrooms may benefit from increased opportunities to respond. This is of utmost importance for special education teachers, who face a variety of challenging student behaviors that can interrupt instruction and impede learning (Haydon & Musti-Rao, 2011; Madsen, Becker, & Thomas, 2001). Increasing rates of opportunities to respond in a classroom can lead to positive outcomes for students, including increases in desired social behavior, decreases in undesired social behavior, and increases in academic performance.

After-Action Review

After action review consists of a professional conversation discussing success as well as areas of needed improvement for future performance. It can be used to further develop pre-service special education experiences by developing an early disposition of collaboration and continuous improvement, and to enable individual reflection on

teaching experiences and to understand why interim objectives were or were not accomplished. After-action review also encourages pre-service special education teachers to understand what lessons can be drawn from their past experiences, and how to evaluate these lessons to improve performance (Baird, Holland, & Deacon, 1999; Britton & Anderson, 2010).

Ellis and Davidi (2005) emphasized three functions that after-action reviews serve: self-explanation, data verification, and feedback. After-action review was an effective tool for increasing learners' self-efficacy; the rationale being that it helped learners make sense of their past behavior by creating valid cognitive models of reasons for whether their performance was successful (Ellis, Mendel, & Nir, 2006). Thus, after-action review may also boost self-efficacy by fostering appraisals of performance for novice teachers. Additionally, after-action review assists learners in identifying more internal and specific causes of behavior, which lead to a greater sense of control and accountability, and a more accurate model of their performance (Ellis, et al., 2006).

According to Collet (2012), instructional change required not only awareness of content and practices, but more importantly, an understanding of the contexts involved in the construction and appropriation of knowledge. These experiences enabled pre-service teacher candidates to apply the knowledge they have learned in the college classroom in the context of real-world classrooms, thereby solidifying and deepening their understanding and skills in the teaching profession as well as providing contextualized professional development, creating opportunities of the construction of beliefs and

practices to be grounded in teaching experiences (Collet, 2012; Britton & Anderson, 2010).

Rathel, Dragow, and Christle (2008) reported the results of after-action review with two pre-service teachers, noting specific positive and negative communication and classroom interactions from an online reflective journal. The supervisor of two pre-service teachers met with each participant to discuss the frequency of communication regarding positive and negative behaviors reported within each journal. Ratios of positive-to-negative teacher communication behaviors were discussed along with an explanation of the use of praise and positive communication when working with students. Results from this study concluded both participants increased frequency of positive communication occurrences behaviors due to this feedback. Participant one began with a baseline, ranging from 10 to 17 positive communication occurrences per 30 minutes session and increased to a range of 27 to 79 occurrences per 30 minute session after the feedback (after-action review) intervention. Participant two began with a baseline, ranging from 27 to 41 positive communication occurrences per 30 minute session, and increased it to 30 to 52 occurrences per 30 minute session after the intervention. Their self-perceptions of classroom management ability and skill also improved after feedback sessions. This study indicated the two teachers' positive communication occurrences improved from after-action review.

Capizzi, Wehby, and Sandmel (2010) studied implementation of after-action review as a method of intervention. In this study, three teacher candidates who were

enrolled in a graduate level special education teacher preparation program were videotaped during lesson delivery while teaching in the classroom during their practicum placement. The candidates met for ten weeks with an instructional consultant for approximately one hour each week to review the video of the recently delivered lesson. The consultant discussed components of effective instruction and identified when each teacher candidate should include more opportunities to respond (OTR) during the lesson. Participant one began with a baseline OTR rate mean of 1.97 per minute and increased following after-action review to 3.49 OTR rate mean per minute. Participant two began with a baseline OTR rate mean of 2.37 per minute and increased following after-action review to 3.63 OTR rate mean per minute. Participant three began with a baseline OTR rate mean of 1.66 per minute and slightly decreased following after-action review to 1.31 OTR rate mean per minute. Two out of three participants' method of instruction and ability to engage students improved following after-action review.

After-action review can supplement what pre-service teachers learn in pedagogy classes in a meaningful way. As pre-service special education teachers are challenged to view how their actions influence student outcomes, teacher preparation programs need to afford pre-service special education teachers ample opportunities to practice skills and understand the consequences of their actions through reflection, conversations, and consideration of multiple viewpoints (Brent, Wheatly, & Thomson, 1996; I'Anson, Rodrigues, & Wilson, 2003; Miller, 2009).

For after-action review to be the most effective, goals need to be clarified to ensure understanding and to minimize the gap between where pre-service special education teachers start and the ending goal (Hattie, 2012). Therefore, it is important for a pre-service teacher to be cognizant of what he or she already knows in order to articulate what he or she wants to learn. The effectiveness of the coaching program or after-action review is modulated by the clarity of the shared vision, the way individuals in the program experience change, and the quality of communication within the coaching relationship (Reinke, Sprick, & Knight, 2009).

Self-Reflection

Teachers' beliefs are perspective frameworks that shape professional identities and thinking about instructional effectiveness. These beliefs mediate the translation of knowledge into practice and affect teacher behavior in the classroom (Mezirow, 2003; McDiarmid & Vinetin-Johansen, 1993; Ernest, 1989; Pajares, 1992). Self-reflection on practice encourages teachers to revisit instructional experiences and maximize the construction of meaning as a critical first-step for improved instruction which may allow for recognition of areas that need strengthening, consideration of alternatives, and reconstruction of teaching actions (Collet, 2012). Self-reflection can also bridge experience and learning, pushing one to critique unexamined assumptions and beliefs, involve a shift in thoughts, feelings, and behavior and lead to active inquiry which allows for critique of past beliefs and actions and to formulate plans for future actions (Mezirow, 2003; Kitchenham, 2008).

Lotter, Singer, and Godley (2009) reported that the nine pre-service teachers found daily reflections to be influential in changing their teaching practice because they learned to look at their strengths and missed opportunities during instruction. They also noted the importance of reflection in practice: more reflective teachers are able to recognize problems, reframe them using pedagogical and content specific knowledge, and design a plan for solving the problem.

Technology Enhanced Learning

A core goal of teacher preparation programs is to close the gap between knowledge and practice. To do so, some teacher preparation programs construct learning opportunities using situated learning. Technology offers an opportunity to observe and evaluate teacher candidates in formats other than live teaching. Such experiences help prepare teachers to thoughtfully meet the demands of today's schools (Capizzi, Wehby, & Sandmel, 2010).

Virtual simulations have emerged in teacher training programs as an effective and efficient approach. Simulating classroom scenarios in a virtual form is one strategy for situated learning experiences for pre-service special education teachers (Dawson, & Kraft, 2013). Immersion in virtual environments and augmented realities can shape participants' strengths and preferences in new means beyond what sophisticated computers and telecommunication have generated thus far, with multiple implications for K-12 education (Dunleavy, Ded, & Mitchell, 2008). When pre-service special education candidates explore connections between actions as teachers combined with the learning

and engagement of students, the opportunity to strengthen effectiveness when they enter the classroom is increased (Falsetto, 2011).

As efforts to improve higher education continue and evidence of experiential learning's effectiveness increase, so does the need for innovative ways to incorporate an experiential approach into courses (Boggs, Mickel, & Holtom, 2007). There is need for these immersive environments in education today because of the changing demographics of students and teachers. Immersive virtual learning environments can potentially change the face of teacher professional development with innovative program models. More research is needed to establish efficacy (Straub, 2013).

TeachLivE™

TeachLivE™ is a mixed-reality, virtual learning environment with simulated students that provides teachers the opportunity to develop pedagogical practice in a safe environment without real students involved. In this environment, pre-service teachers are immersed in a setting that is meant to replicate a classroom. The virtual classroom is populated by a group of avatar students that respond in behaviors that typify the attributes unique to the middle-school-age student population (Judge, Bobzien, Maydosz, Gear, & Katsioludis, 2013). The TeachLivE™ virtual learning environment provides prospective teachers the opportunity to practice classroom instruction and classroom management skills, which are needed to be effective teachers ("TLE TeachLivE™," 2014). This environment allows pre-service teachers to utilize emergent knowledge of effective instruction and classroom management skills in a flexible and safe practice environment.

Novice teachers can make mistakes without impacting real students, and can repeat the experiences without the students' remembering the initial encounter (Dawson & Kraft, 2013; Judge, Bobzien, Maydosz, Gear, & Katsioloudis, 2013; Katsioloudis & Judge, 2012).

Garland (2012) studied discrete trial training and the effects of coaching in the TeachLivE™ virtual learning environment with four graduate students employed in a K-12 public school setting. Participant performance was recorded while participants were trained to implement four components of the discrete trial training procedure as it was recorded (Garland, 2012). Discrete trial method components included: (1) the trainer's presentation, (2) the students' response, (3) the consequence, and (4) a short pause between the consequence and the next instruction (between interval trials) (Anderson, Taras, & Cannon, 1996). Four baseline sessions were conducted concurrently with the four graduate student participants at the beginning of the study. The researcher gave each participant ten minutes to read the task instruction sheet, review the data sheet for teaching the task. Each participant was then asked to perform ten teaching trials in the first and second sessions. Participant performance was reviewed and components were identified that were performed correctly and incorrectly. Participants were coached based on the elements found within the evaluation form. Following the coaching, the participants performed 10 uninterrupted discrete trials that were scored for fidelity. This study suggested numerous benefits for teachers participating in the TeachLivE™ virtual classroom including: improved performance, increased confidence, and increased fidelity

of implementation. A positive trend was also noted across all four participants when moving from baseline to treatment conditions, where change was directly related to the coaching intervention (Garland, 2012).

Judge, Bobzien, Maydosz, Gear, and Katsioloudis (2013) conducted a multi-element brief experimental analysis, comparing three varying teacher training conditions within the TeachLivE™ virtual learning environment. The researchers specifically investigated six pre-service teachers' use of differential reinforcement of incompatible behavior (DRI), a set of behavior strategies in the simulated classroom. The six pre-service teacher participants were taught several DRI behavior strategies aimed at increasing student engagement through on-task behavior and decreasing undesirable behaviors that can interfere with student learning.

The participants were divided into three groups: Group 1 – received only video instruction in the DRI prior to intervention session one in the TeachLivE™, Group 2 – received video instruction prior to session one as well as email feedback in the DRI following intervention two, and Group 3 – received video instruction in DRI prior to intervention one, as well as peer and email feedback following session two. Participants' implementation of DRI evidenced an increase in all four components.

Enicks (2012) used a multiple baseline approach across groups to examine 19 pre-service teachers' use of effective teaching behaviors, concurrently, between practicum settings and sessions in the TeachLivE™ virtual learning environment. Participants were assigned to one of four groups and were evaluated using the *Assessing Teacher*

Effectiveness Scale during all observations in the practicum settings (Enicks, 2012). Each participant completed four ten-minute TeachLivE™ sessions throughout the semester. Observers immediately coached participants following each TeachLivE™ session and focused on overall observable areas of strengths and weaknesses from the session. Participants also completed a pre-study and post-study reflection. Regression analysis from the study indicated a statistically significant relationship between the subset of indicators from the Assessing Teacher Effectiveness Scale to the treatment of TeachLivE™. Regression analysis of participants' pre-study and post-study reflection scores over the duration of the semester indicated a statistically significant relationship between ongoing practices, decreased difference in pre-study and post-study self-reflection scores, and determined self-reflection to be an effective tool.

Similarly, Elford (2013) extended research on bug-in-ear coaching as a means to increase behavior- specific praise statements delivered by four secondary teachers in the TeachLivE™ virtual classroom. Bug-in-ear technology allowed coaches to give teachers in the classroom immediate feedback via a wireless Bluetooth device. Four participants with secondary teaching experience, ranging from three to twenty-six years, participated in this study. Single-case-alternating treatment design was used to collect data on the behavior of the four participants over a period of 19 sessions. The intervention consisted of a coach providing the teacher with verbal feedback for delivering behavior-specific praise during a mini-lesson in the TeachLivE™ virtual learning environment, using the

bug-in-ear device. The average rate of behavior-specific feedback increased from 13% to 64% during bug-in-ear coaching for three of the four participants.

Virtual reality such as TeachLivE™ offers innovative ways for pre-service special educators to practice teaching. By providing unique benefits such as the ability to facilitate teacher professional development, TeachLivE™ provides opportunities for feedback and virtual rehearsal of teaching practices, including high quality pedagogical practices such as questioning and wait time (Straub, 2013).

The novel approach of a mixed-reality based realistic classroom experience addresses how to improve the effectiveness of managing adolescent behaviors while increasing students' time on task and teachers' instructional time (Dieker, Hynes, Hughes, & Smith, 2008). Teaching to avatars gives teacher candidates and practicing teachers the opportunity to unpack content and teach it from multiple perspectives. Student perception can also be targeted and teachers can virtually rehearse their responses at an accelerated pace (Straub, 2013).

Simulated teaching environments such as TeachLivE™ have the potential to create more experiential practica for special education pre-service teachers. In such settings, special education pre-service teachers are able to practice teaching techniques. The responsive reactions and performance of the virtual students provides important information about pre-service teachers' efforts (Judge, Bobzien, Maydosz, Gear, & Katsioloudis, 2013). The purpose of the virtual teaching environment is to positively impact teacher recruitment, preparation, and retention in education by allowing teachers

to improve their skills with virtual students, providing an approach to learning the art of teaching (Katsioloudis & Judge, 2012). As Wasko (2013) noted, educators must bring 21st century technology into learning in meaningful ways to engage, motivate, and inspire learners of all ages to achieve.

Virtual classrooms such as TeachLivE™ offer an environment for experiencing various student characteristics and learning about special teaching approaches. The use of simulations offers benefits related to reflective practices by providing an error-free safe environment, where pre-service teachers experiment with a variety of teaching strategies and gain more from classroom-based experiences (Hixon & So, 2009). It is important for special education pre-service teachers to experience a positive field experience early, so that there will be opportunities for learning and practice of effective classroom management strategies. With specific preparation, teachers can be more equipped and willing to stay in the classroom longer, especially if they are provided strong pre-service training (Dieker, et. al, 2008; Whitworth, 2000).

The need to reduce shortage and attrition in special education remains a priority. Since attrition rates continue to be higher for those with little initial preparation, immersive virtual learning environments such as TeachLivE™ can enhance pre-service special education teacher preparation and therefore increase confidence in the classroom, ensuring a higher rate of teacher retention (Dieker, Hynes, Hughes, & Smith, 2008). The implications of studies using TeachLivE™ further inform research practices in pre-service special education teacher preparation. It is reasonable to hypothesize that what

can be learned from TeachLivE™, in combination with specific after-action review regarding opportunities to respond, will have the utility to change pre-service special education teaching practices in a positive way and will continue to inform how TeachLivE™ can be used in pre-service special education teacher preparation.

CHAPTER III

METHODOLOGY

Purpose and Research Questions

The purpose of this study was to evaluate the effects of the TeachLivE™ virtual learning environment on improving instructional strategies among pre-service special education teachers; in particular, how often pre-service special education teachers provided opportunities to respond. Investigation into efficacious tools enhancing pre-service special education teacher training is desirable within collegial settings. All participants were observed teaching within the TeachLivE™ virtual learning environment. After-action review following each TeachLivE™ session was conducted with participants in the treatment group (N=4).

The secondary purpose of this study was to determine how pre-service special education teachers perceived their experiences within the TeachLivE™ virtual learning environment in regards to how it impacted their teaching practices. All participants in this study completed post- TeachLivE™ session self-reflection forms discussing overall session experiences including self-perceptions of how opportunities to respond were provided as well as changes for subsequent session.

The researcher employed an exploratory mixed-methods study utilizing a repeated measures design (quantitative) as well as qualitative approaches with eight pre-service

special education teacher participants. The specific research questions include:

4. How does time in the TeachLivE™ virtual learning environment impact pre-service special education teachers' frequency of providing opportunities to respond?
5. How does time in the TeachLivE™ virtual learning environment coupled with after-action review impact pre-service special education teachers' frequency of providing opportunities to respond?
6. How do pre-service special education teachers perceive experiences within the TeachLivE™ virtual learning environment in regards to how it impacts their teaching practices?

Permission to conduct the study was obtained from the Institutional Review Board (IRB) Committee of Texas Woman's University (Appendix A).

Participants

After obtaining human subject research approvals from the university, individuals were recruited to participate in the study. Initial participant recruitment was acquired from the sample population of students enrolled in EDSP 4263, Behavior Management Strategies for Students with Disabilities (N=53). Students enrolled in this course were typically undergraduates and seeking special education teacher certification. All students enrolled in the course had the opportunity to volunteer for participation in the study. Paper questionnaires were dispersed during class in which students identified initial interest in participation. Students folded and placed the questionnaires into a sealed envelope. The

sealed envelopes were collected by the researcher and disseminated into groups of those showing interest and those not. Fourteen students enrolled in EDSP 4263 self-identified as showing initial interest in participating in the study. Since the study utilized eight participants, the researcher randomly selected participants for the treatment and comparison group by drawing questionnaires of interested participants out of a basket.

All pre-service special education teachers randomly chosen (N=8), agreed to participate in the study and interact in the TeachLivE™ virtual learning environment over five separate sessions spanning 6 weeks. Participants completed a pre- and post- *Teacher Sense of Efficacy Scale* as well as post- session self-reflections. Participants randomly selected for the treatment group (N=4) were also willing to receive after-action review following all TeachLivE™ sessions, which comprised of a one on one meeting with the researcher to discuss specific observations regarding opportunities to respond. Written consent to participate in the research study per university guidelines was given to all participants. No participants withdrew from this study. The study design is illustrated in Table 1.

Table 1

Participant Involvement in Research Study

Participants	Pre-Teacher Sense of Efficacy Scale	TeachLivE™ (5 sessions)	Self-Reflection	After-Action Review	Post-Teacher Sense of Efficacy Scale
Treatment Group N=4	X	X	X	X	X
Comparison Group N=4	X	X	X		X

Setting

The setting utilized to conduct this dissertation research included the TeachLivE™ virtual learning environment, located on the Texas Woman's University (Denton campus), in Stoddard Hall room 116. During each ten-minute TeachLivE™ session, participants were given the opportunity to practice pedagogical and classroom management strategies while interacting with the five, middle school avatar students. Participants faced a 60" television, where the avatars were seated at desks within the virtual classroom.

Data Collection Procedures

Following the recruitment and assignment of participants to groups, the researcher conducted an orientation session prior to the first TeachLivE™ session to discuss aspects of the study and to have the participants observe the TeachLivE™ virtual learning environment and its surroundings. All participants were provided a handbook (Appendix

B) for referencing definitions and examples of opportunities to respond, a study timeline, an overview of what to expect during each visit to the TeachLivE™ virtual learning environment and a copy of the lesson that would be taught throughout all of the sessions. The researcher also introduced the various personalities and characteristics associated with each of the student avatars within the TeachLivE™ virtual learning environment.

Throughout the entirety of the study, all participants practiced teaching lesson three from the book *Focusing Together: Promoting Self-Management Skills in the Classroom* (Rademacher, Pemberton & Cheever, 2006). This lesson focused on teaching learning expectations that promote responsible work habits and respect within a classroom.

All participants were observed on their frequency of providing opportunities to respond. Types of opportunities to respond were separated into distinct categories as follows: a) academic; suggested (questions verbatim from the lesson plan); yes/no-(close-ended questions); and original (self-made questions); b) management and 3) behavioral. Examples of each type of opportunity to respond can be found in Appendix B. Based on the type of opportunity to respond that was observed with each participant, a frequency tally was placed in the appropriate column (Table 2).

Table 2

TeachLivE™ Session Observed Frequencies of Opportunities to Respond Tally Chart

Opportunities to Respond	Tally Marks of Observed Frequencies
Academic	*Original-* *Suggested-* *Yes/No-*
Management	
Behavioral	
Anecdotal Notes	

To establish inter-rater reliability, a second trained observer viewed 50% of the recorded sessions and tallied the observed frequency of opportunities to respond for each session. Prior to obtaining inter-rater reliability, the researcher trained the second observer by watching a study video recording together and carefully explained when to tally, what kind of tally it was, and the reason behind it. After viewing and noting the observed frequencies, a direct comparison of both observations was made to determine the degree of similarity and agreement. Reliability was determined when frequency counts of at least 80% existed between the researcher and the trained observer.

In combination with TeachLivE™ sessions, self-reflection data was also collected. Immediately following each TeachLivE™ session participants were asked

write and respond to the following self-reflection questions: 1) Reflect on your experience within the TeachLivE™ virtual learning environment 2) Reflect on how you felt you did when providing opportunities to respond 3) Reflect on something you feel that you would like to do differently next time.

A pre- and post- data measure was also completed titled the *Teacher Sense of Efficacy Scale (TSES),* (also referred to as the *Ohio State Teacher Efficacy Scale*) (Woolfolk-Hoy & Tschannen-Moran, 2001) by each participant and measured pre-service special education teachers' sense of self-efficacy. Woolfolk-Hoy & Tschannen-Moran, 2001 confirmed reliability and validity of the scale and found the following values shown below specifically in regards to the long form of this scale.

Table 3

Teacher Sense of Efficacy Reliability and Validity

	Mean	SD	∂
OSTES	7.1	.94	.94
Engagement	7.3	1.1	.87
Instruction	7.3	1.1	.91
Management	6.7	1.1	.90

To obtain reliability and validity within this scale, Tschannen-Moran and Woolfolk Hoy tested this instrument and conducted a factor analysis to determine how participants responded to various questions. A consistency was found between three

moderately correlated factors in this scale including: *Efficacy in Study Engagement, Efficacy in Instructional Practice, and Efficacy in Classroom Management*. To determine the subscale scores of the three aforementioned factors, computed unweighted means of the items that load on each factor are shown in Table 4.

Table 4

Teacher Sense of Efficacy Scale Factor Analysis Scale Items

Long Form	**Scale Items**
Efficacy in Student Engagement	1,2,4,6,9,12,14,22
Efficacy in Instructional Strategies	7,10,11,17,18,20,23,24
Efficacy in Classroom Management	3,5,8,13,15,16,19,21

For the purpose of this dissertation study, the long form version of this scale was used to more accurately depict self-efficacy among the pre-service special education teacher participants. Since the TeachLivE™ virtual classroom is new technology to the world of virtual classrooms used for specific objective training, it is viable to explore the efficacy of different strategies that may be employed with pre-service teachers and to paint a more accurate picture of what participants within the TeachLivE™ virtual classroom are actually thinking and feeling in regards to their teaching practices.

Participants in the treatment group (N=4) met with the researcher upon completion of their self-reflections for after-action review after each TeachLivE™ session. The researcher spoke specifically on observations of opportunities to respond

that were provided during the session. The after-action review focused on observable areas of strength and weakness, specifically opportunities to respond and how further opportunities to respond could be conducted in future TeachLivE™ sessions. Participants in the comparison groups (N=4) completed self-reflections after each TeachLivE™ session.

Research Design

An exploratory, mixed-method, repeated measures design was utilized for the purpose of this study due to quantitative and qualitative data collected simultaneously. A repeated measures design was deemed appropriate for the initial research question, as it assessed the first objective within this study and measured subjects several times after the treatment (after-action review). After-action review served as the independent variable for participants within the treatment group and the TeachLivE™ virtual learning environment served as the dependent variable for all participants.

A first research question in this study sought to determine how time in the TeachLivE™ virtual learning environment impacted pre-service special education teachers' frequency of providing opportunities to respond. All participants in this study were scheduled in the TeachLivE™ virtual learning environment over five sessions. A repeated measures design was deemed appropriate to assess the first research question in this study.

The second research question explored how time in the TeachLivE™ virtual learning environment combined with after-action review impacted the pre-service special

education teachers' frequency of providing opportunities to respond. For this question specifically, the researcher disseminated data from each participant in the treatment group by breaking it down into specific opportunity to respond categories. These discerning categories included: 1) academic related opportunities to respond, 2) management related opportunities to respond, and 3) behavior related opportunities to respond. These categories were identified to more precisely depict target areas in which each participant had strengths and/or weakness. Participants were given examples and definitions of each type of opportunity to respond prior to the beginning of the study.

The final research question focused on how pre-service special education teachers perceived experiences within the TeachLivE™ virtual learning environment, specifically in regards to how it impacted their overall teaching practices. Qualitative data was collected from self-reflections completed by all participants following each TeachLivE™ session. Creswell (2006) noted that qualitative research allows for inclusion of participant voice, reflexivity in research, and a complex description and interpretation of a problem. Questions on the self-reflections remained the same throughout each session.

Frequencies of providing opportunities to respond were observed from each participant during all sessions within the TeachLivE™ virtual learning environment and were separated into specific categories including academic, management, and behavior. A sum and average of opportunities to respond per minute were calculated and a statistical analysis using a multivariate analysis of variance (MANOVA) was also conducted. This tested for discrepancy between the *TSES* pre- and post- scales and

groupings of correlated items including: Efficacy in Student Engagement, Efficacy in Instructional Strategies, and Efficacy in Classroom Management.

Qualitative data from participant's self-reflections was coded using the NVivo qualitative analysis software to note similarities among language used in participant self-reflections. Words and phrases within each participant self-reflections were coded into the appropriate themes and were represented in overall percentages including: 1) positive comments, 2) negative comments, 3) things to change for the next session, and 4) feelings of providing opportunities to respond.

Treatment Procedures

All participants were observed by the researcher during each TeachLivE™ session to observe frequency of opportunities to respond between beginning, middle and end of study observations. After-action review was conducted following all TeachLivE™ sessions for participants in the treatment group and allowed for appropriate and individualized after-action review.

Pre-/post- efficacy scale. The *Teacher Sense of Efficacy Scale (TSES)*, (also referred to as the *Ohio State Teacher Efficacy Scale*), was used to collect a pre- and post-efficacy measure from all participants. The long form version of this scale was used to more accurately depict self-efficacy among the pre-service special education teacher participants.

TeachLivE™ sessions. All participants were scheduled for five sessions in the TeachLivE™ virtual learning environment. During each session, lesson three titled, 'Our

Learning Expectations' from the *Focusing Together: Promoting Self-Management Skills in the Classroom* book was taught. Each participant spent ten minutes in the TeachLivE™ virtual learning environment during each session.

Self-reflection. All participants completed a short series of self-reflection questions immediately collected by turning in prior to leaving the TeachLivE™ session.

After-action review. Participants in the treatment group met with the researcher after filling out self-reflections after each TeachLivE™ session. Participants debriefed on their overall experiences within the classroom. The researcher delineated observed session data related to providing opportunities to respond and discussed how to better utilize this technique in subsequent sessions. Participants had time to answer questions related to each session.

CHAPTER IV

RESULTS

The purpose of this study was to evaluate the effect of the TeachLivE™ virtual learning environment on improving instructional strategies among pre-service special education teachers; particularly, frequency of providing opportunities to respond. Secondly, this study explored the effects of time in the TeachLivE™ virtual learning environment, combined with after-action review. This study also focused on pre-service special education teachers and their perceptions of how the TeachLivE™ virtual learning environment impacted their teaching practices.

Participants (N=8) were randomly assigned to one of two groups, treatment or comparison. All participants were scheduled to receive five sessions in the TeachLivE™ virtual classroom. Participants in the treatment group received after-action review after each TeachLivE™ session, whereas the control group did not receive any after-action review. Following each TeachLivE™ session, all participants completed self-reflection questions. A pre- and post- self- efficacy measure was also administered at the beginning and at the conclusion of this study.

An exploratory, mixed-methods, repeated measures design was utilized, with quantitative and qualitative data collected simultaneously. This design was deemed appropriate for the initial research question. A repeated measures design measures subjects several times after a treatment (after-action review). The after-action review

served as the independent variable for participants within the treatment group. The TeachLivE™ virtual learning environment served as the dependent variable for all participants.

This chapter provides results according to the research questions, highlighting quantitative and qualitative data and using tables and figures with brief explanations. Data was triangulated as a means to check the integrity of the inferences drawn from all data sources. Discussion of results is provided in Chapter 5.

Research Question One

A primary objective of this study was to determine how time in the TeachLivE™ virtual learning environment impacted pre-service special education teachers' frequency of providing opportunities to respond. All participants in this study were scheduled in the TeachLivE™ virtual learning environment over five sessions. A repeated measures design was deemed appropriate as it assessed the first research question in this study. A repeated measures design measures subjects before, during, and after a treatment.

Presentation and interpretation of results are based on visual graphs containing data, which allow for a visual representation of each phase of the study and provide a direct reference to the first research question. Figure 1 illustrates the frequency of opportunities to respond given for all participants within the TeachLivE™ virtual learning environment throughout each session. Participants A-D were included in the treatment group while participants E-H were included in the comparison group.

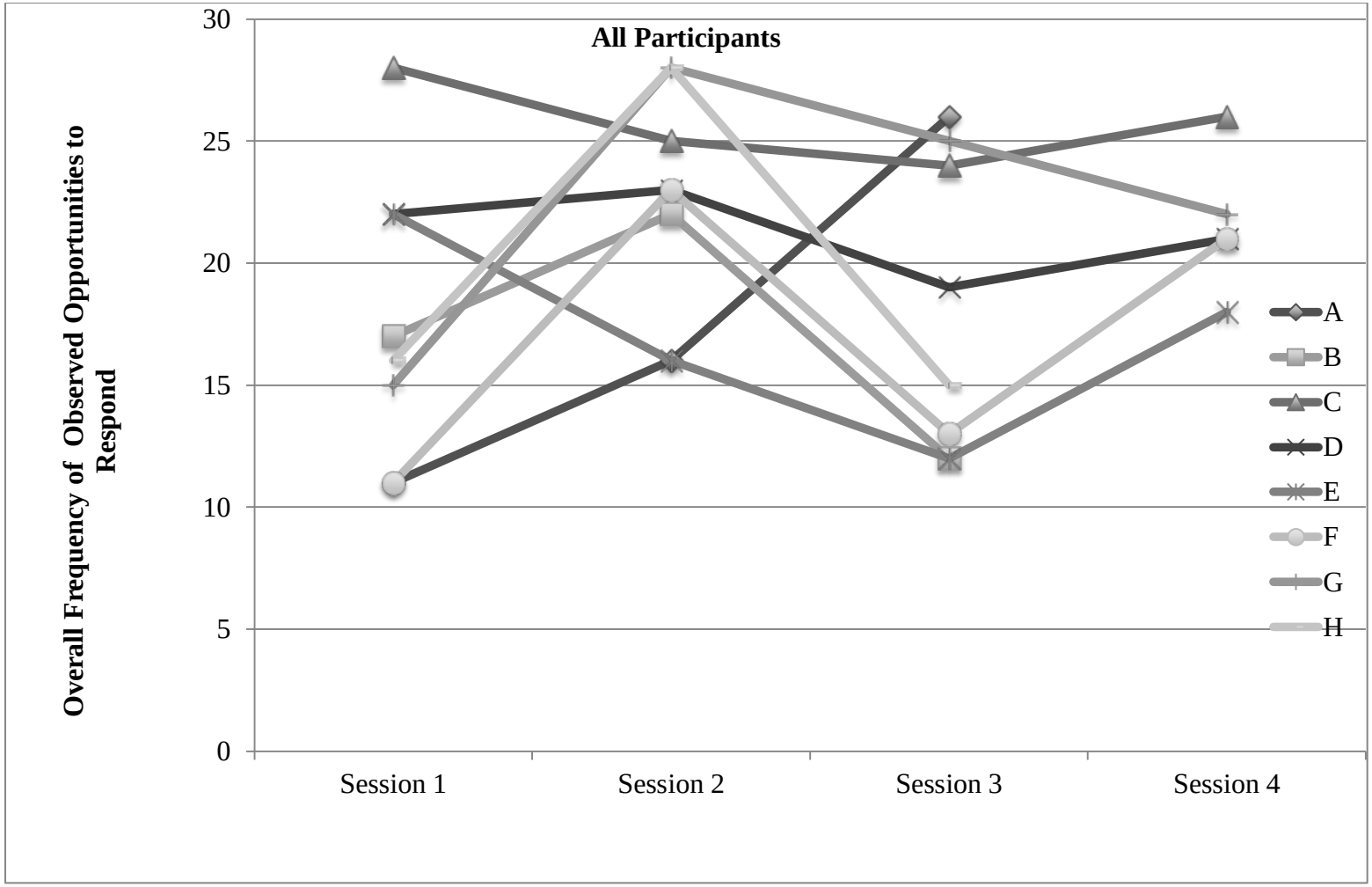

Figure 1. Overall frequency of observed opportunities to respond

Participant A

Participant A completed three sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 11 opportunities to respond were demonstrated. Between the first and final session, there was a steady upward progression resulting in an overall increase of +15 opportunities to respond between the first and last session. Participant A produced an

Participant B

Participant B completed three sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 17 opportunities to respond demonstrated. Between the first and second session, there was an increase of +6 opportunities to respond, however, between the second and final session, the participant declined by -10 opportunities to respond resulting in a -5 change between the first and last sessions. Participant B produced an average rate of 17 opportunities to respond/per minute over three TeachLivE™ sessions.

Participant C

Participant C completed four sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 28 opportunities to respond demonstrated. The second and third sessions revealed a slight decline of -3 and -1 respectively. The final session revealed a slight increase of +2 opportunities to respond demonstrated, resulting in an overall decrease

between the first and last sessions of -2. Participant C produced an average rate of 25 opportunities to respond/per minute over four TeachLivE™ sessions.

Participant D

Participant D completed four sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 22 opportunities to respond demonstrated. The second session revealed a +1 increase, whereas the third session declined by -4. The final session revealed a slight positive increase of +2 resulting in an overall decrease of -1 opportunities to respond between the first and last sessions. Participant D produced an average rate of 21 opportunities to respond/per minute over four TeachLivE™ sessions.

Participant E

Participant E completed four sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 22 opportunities to respond demonstrated. A decline of -6 and -4 in the second and third sessions was noted between the first and final session resulting in an overall decrease of -4 opportunities to respond provided between the first and last sessions. Participant E produced an average rate of 15 opportunities to respond/per minute.

Participant F

Participant F completed four sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 11 opportunities to respond demonstrated. An upward trend of +12 was noted

between the first and second session. Opportunities to respond dropped -10 between the second and third sessions with the final session revealed a spike of +8 resulting in an overall increase of +10 between the first and last sessions. Participant F produced an average rate of 19 opportunities to respond/per minute over four TeachLivE™ sessions.

Participant G

Participant G completed four sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 15 opportunities to respond demonstrated. A sizeable increase was noted between the first and second session of +13. There was a slight -3 decrease between the second and third session. The final session also revealed a slight decrease of -3 resulting in an overall increase of +7 opportunities to respond between the first and last sessions. Participant G produced an average rate of 25 opportunities to respond/per minute over three TeachLivE™ sessions.

Participant H

Participant H completed three sessions in the TeachLivE™ virtual learning environment during the course of this study. The initial TeachLivE™ session revealed a total of 16 opportunities to respond demonstrated. The second session revealed an upward progression of +12. The final session revealed a decline of -13 resulting in an overall decrease of -1 opportunities to respond between the first and last sessions. Participant H produced an average rate of 21 opportunities to respond/per minute over three TeachLivE™ sessions.

Research Question Two

The second research question explored the effects of time in the TeachLivE™ virtual learning environment combined with after-action review, on pre-service special education teachers' frequency of providing opportunities to respond. To address this question, the researcher investigated data from each participant in the treatment group (N=4) by breaking it down into specific opportunity to respond categories. These categories included: 1) academic related opportunities to respond (suggested, yes/no, and original), 2) management related opportunities to respond, and 3) behavior related opportunities to respond. Categories were identified to more precisely depict target areas in which each participant had strengths and/or weakness. Participants were given examples and definitions of each type of opportunity to respond prior to the beginning of the study during their orientation.

Presentation and interpretation of results regarding the second research question are presented through a Figure 2. These graphs highlight each participant in the treatment group who received after-action review and illustrate the rate at which opportunities to respond were given in the TeachLivE™ virtual classroom for each corresponding category.

Participant A relied more on suggested opportunities to respond during session one, but decreased their use to zero by the last session. Yes/no opportunities to respond increased throughout each session; however, the overall average use of this specific type still remained low at 1.3 per session. Original and managerial type opportunities to

respond both increased between the first and last sessions. Behavior related opportunities to respond were steady during sessions one and two, but declined to zero during session three.

Participant B relied on suggested opportunities to respond during session one, but decreased their use significantly by the last session with an overall change of -7 between the first and last sessions. Yes/no opportunities to respond stayed minimal and constant throughout all three sessions. Frequency of original opportunities to respond doubled between session one and two, but then decreased with only a +1 difference between the first and last session. Managerial type opportunities to respond increased between the first and second session, however, a decrease was noted between the second and third session. Behavior related opportunities to respond also had a peak between sessions one and two and a decline at session three.

Participant C remained fairly constant in providing suggested opportunities to respond with an overall change of -1 between the first and last sessions. Yes/no opportunities to respond also stayed constant with an overall -2 change between the first and last sessions. Original opportunities to respond decreased drastically over the course of four sessions. Though there was a slight increase during session two, the final session revealed a -4 difference between the first and last session. Management related opportunities to respond yielded an increase of +5 between the first and last sessions. Behavioral type opportunities to respond seesawed between all sessions.

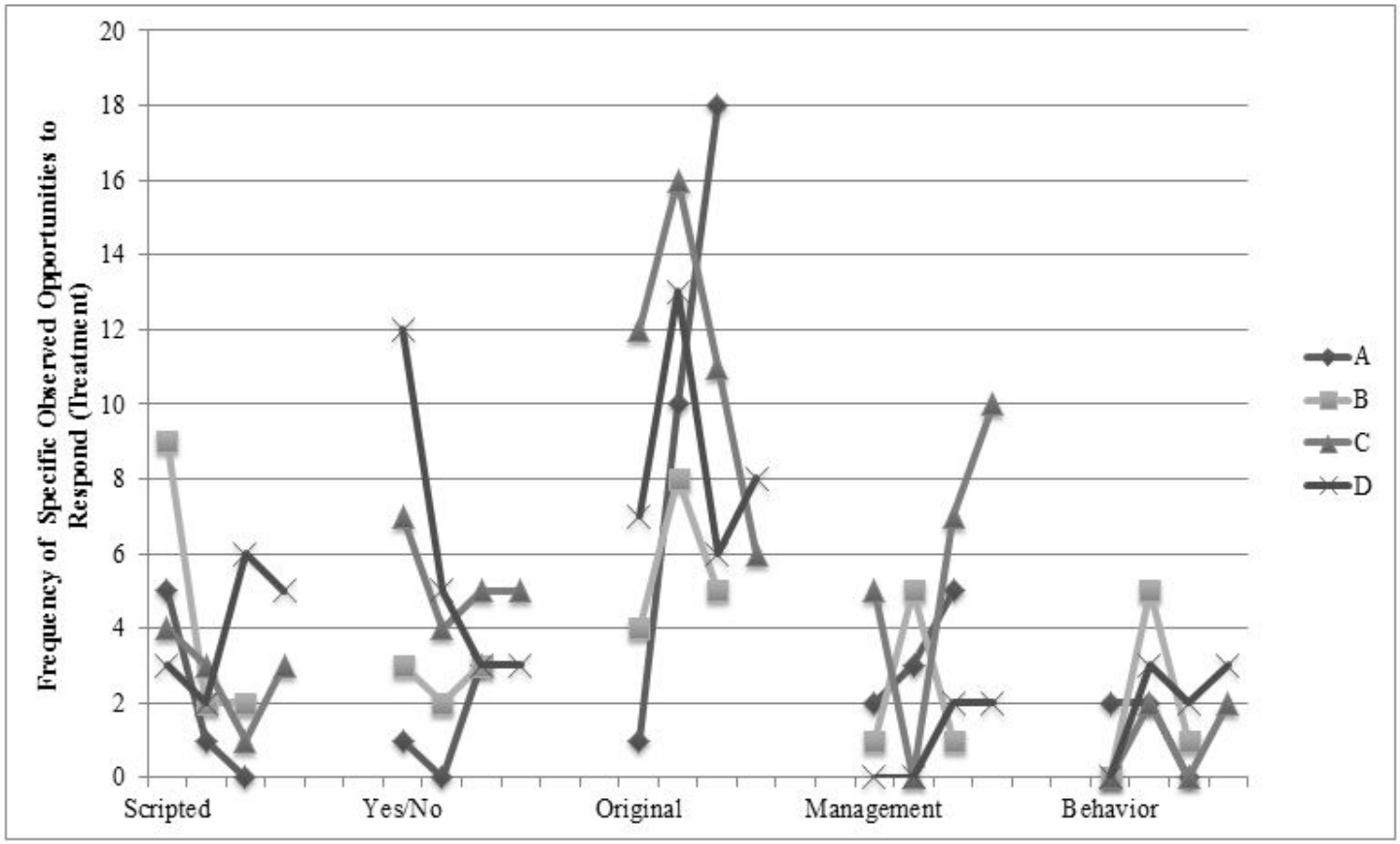

Figure 2: Frequency of specific observed opportunities to respond (treatment)

Participant D had an increased use of suggested questions over the course of the TeachLivE™ sessions with an overall change of +3 between first and last sessions. Yes/no opportunities to respond decreased between sessions one and two and leveled off during sessions three and four. Original opportunities to respond increased from session one to two, there was only a +1 increase between the first and last session. Although the average rates in the management and behavior categories were relatively minimal, a gradual increase in providing opportunities to respond in these two categories was observed.

Research Question Three

The final research question focused on how pre-service special education teachers perceived experiences within the TeachLivE™ virtual classroom, specifically in regards to how it impacted their overall teaching practices. Qualitative and qualitative data was simultaneously investigated to analyze this research question.

SPSS predictive analytics software was utilized to analyze quantitative data from the pre- and post- efficacy scales. A multivariate analysis of variance (MANOVA), tested for discrepancy between the pre- and post- scales and groupings of correlated items including: *Efficacy in Student Engagement, Efficacy in Instructional Strategies, and Efficacy in Classroom Management*. P values were found to be very large in the categories of *Efficacy in Classroom Management* = .909, and *Efficacy in Student Engagement* = .357, however, the p value in the category of *Efficacy in Instructional Strategies* approached significance at .075. Quantitative analyses attempted were

inconclusive due to the small sample size and power (.08%); however, one may infer there are differences due to the descriptive data. Visual representations of this data will serve as indicators for the purpose of this research question. Further discussion of this data is discussed in Chapter 5.

Qualitative data was analyzed through NVivo qualitative analysis software. Words and phrases within each participant self-reflections were coded into the appropriate themes and are represented in overall percentages including: 1) positive comments, 2) negative comments, 3) things to change for the next session, and 4) feelings of providing opportunities to respond. This data will provide a statistical perspective as well as a visual analysis of commonalities within each coded theme.

Positive Comments

Overall, 17.43% of self-reflection data coded were marked as positive comments including words and phrases written by the participants in their self-reflections. Generally, positive participant comments within the self-reflections were forthcoming including testimonials such as, "Left with a better overall connection to the students", "Really started to see what each student was doing while we were discussing and I noticed things that they would do when I was speaking to them specifically", "Connecting with the students with examples was more beneficial to me as the teacher", "I had accomplished something which I never thought I could do", "I can see and feel the progress I am making in my responses to the students", and "I truly enjoyed my Teachlive (sic) session because it is just incredible how interactive the students are!".

Negative Comments

3.66% of data that was coded fell into the negative comments category. Self-reflection responses from participants had a similar trend throughout all participants first TeachLivE™ session. Comments which involved initial hesitancy within the virtual classroom itself including statements such as: “I was a bit nervous today”, “I started off nervous”, “Was hoping that I would not get too tongue tied…”. As TeachLivE™ sessions progressed, comments became more specific in regards to teaching practices such as: “Disappointed did not have opportunity to engage more with Maria”, “I could have used more open-ended responses to other students rather than just Sean”, “I still have a feeling of missing something during the delivery of my lecture”, and “I was afraid if students asked questions that I could not answer I wouldn’t know what to do”.

Things to Change

Self-reflection data coded populated 21.81% of participant self-reflection words and phrases within this category. This data showed that the pre-service special education teachers were focusing on specific things to enhance during their next TeachLivE™ sessions. One common theme that continued to emerge was specifically directional in regards to the student avatar Maria. Self-reflection statements in regards to Maria included: “Keep getting Maria involved”, “Try to incorporate everyone because I left Maria out today”, “Have opportunity to interact with Maria more”, “I would like to see if I could connect with Maria more”, and “Come up with some sort of intervention to get Maria to come out of her shell and not be afraid to speak up or out to the class”.

Feelings of Providing Opportunities to Respond

Participant self-reflection data aggregated 17.74% of data coded in direct correlation with overall feelings of providing opportunities to respond throughout the TeachLivE™ sessions. Participant self-reflections in the treatment group receiving after-action review specifically in response to their frequency of providing opportunities to respond shared: “I took my time when asking the class questions and gave examples of what it was for so the students would have a better understanding”, “I feel I could have given more wait time as they begin to talk”, and “I could have used more open-ended questions”.

Participant self-reflections from the control group stated: “Each student had a chance to talk at least once whether it was me calling on them or them raising their hand and being called upon. I also felt that if I had completely shut down their responses that they wouldn’t speak anymore, so with this, I asked a deeper question to get them to elaborate”, and “I felt as if I gave all students a chance to speak, however, when probing, I did not always provide room for students to make connections. I feel as if my questions were not always clear”.

Triangulated Analysis

The tables included in this chapter triangulate participant data through visual representations. Triangulation verifies conclusions through the use of multiple methods predominantly in this research study including: observed frequencies, pre-/post- efficacy scales, and self-reflections (Figure 3).

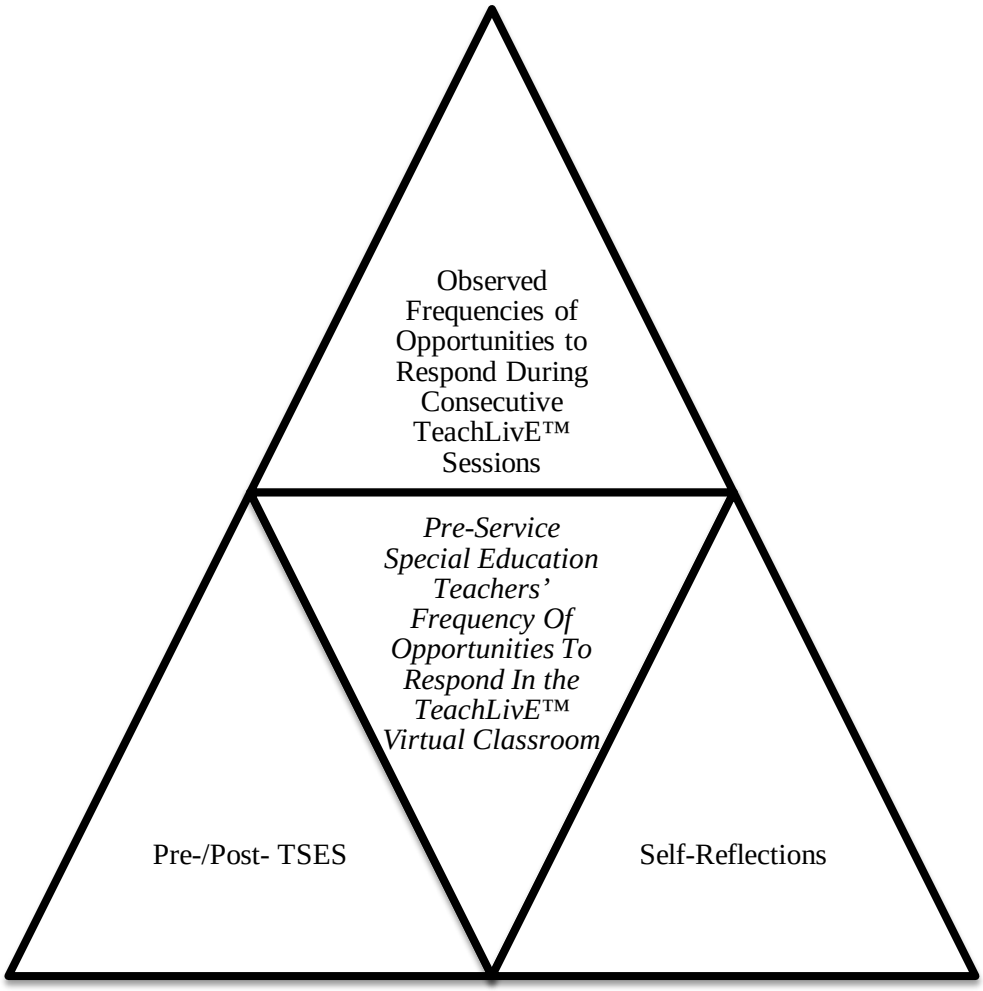

Figure 3. Visual representation of triangulated data

Denzin and Lincoln (1994) explained that the combination of multiple methods, empirical stands, perspectives and observers in a single study is best understood as a strategy that adds rigor, breadth and depth to any investigation. Although statistical significance through quantitative analysis in this study is insufficient, the data measures collected show relevance for the purposes of this study.

CHAPTER V

DISCUSSION

TeachLivE™ is a mixed-reality virtual environment that provides teachers the opportunity to develop various teaching practices. The main purpose of this research study was to evaluate the effect of the TeachLivE™ virtual learning environment on increasing opportunities to respond among pre-service special education teachers. Components of this study include the change frequency in providing opportunities to respond, effectiveness of after-action review, and the impact of the TeachLivE™ virtual learning environment on teaching practices. This chapter highlights and presents summaries and findings from this research study, concluding with a discussion of limitations and implications for future research.

One important component of effective instruction is giving students numerous opportunities to respond during lessons. When teachers increase their rates of providing opportunities to respond, student on-task behavior and correct responses increase, while disruptive behavior decreases (Barbetta, Heron, & Howard, 1993; Carnine, 1976; Sutherland, Alder, & Gunter, 2003; Sutherland & Wehby, 2001; West & Sloane, 1986). When pre-service special educators are taught and given ample time to practice teaching strategies such as providing opportunities to respond, it is more likely that students in special education will not only benefit in increased learning, but longevity of special

education teacher's careers may increase due to overall improvement in student behaviors.

Overview of Study

This exploratory, mixed-method, repeated measures research examined whether the TeachLivE™ virtual learning environment serves as an efficacious tool to prepare pre-service special education teachers by improving instructional strategies; particularly in providing opportunities to respond. Data was collected from all participants through frequency counts of observed opportunities to respond, self-reflection, and a pre-/ post-self- efficacy scale. Triangulation was utilized as a means to check the integrity of inferences drawn from all data sources.

Research Question One

A primary objective of this study was to determine how time in the TeachLivE™ virtual learning environment impacted pre-service special education teachers' frequency of providing opportunities to respond. According to the Council for Exceptional Children (CEC) (1987), when learning new material, teachers should strive to obtain a minimum of 4-6 responses per minute with 80% accuracy. If activities involve review of previously learned material, teachers should strive for 8-12 responses per minute with 90% accuracy. Teachers with advanced preparation in teaching methods and strategies have a greater chance of survival in the classroom (Blair, 2003; Ingersoll, Merrill, & May, 2012).

Findings specified that 3 out of 8 participants increased in overall frequency of providing opportunities to respond, however, all eight participants were observed to have provided the suggested frequency of opportunities to respond within the ranges suggested by the Council for Exceptional Children (1987). This reveals that although three participants showed an overall increase in providing opportunities to respond during this study, all pre-service special education teacher participants (N=8) still provided appropriate frequencies as suggested by CEC.

Multiple studies regarding opportunities to respond have suggested decreases in student behavior within a classroom (Haydon, Conroy, Scott, Sindelar, Barber, & Orlando, 2010; Stichter, Lewis, Whittaker, Richter, Johnson, & Trussel, 2009; Sutherland, Alder, & Gunter, 2003). Educators may assume that with additional fine-tuning and continued after-action review, a continued increased rate in providing opportunities to respond will lead to even more positive outcomes for the participants' future teaching assignments, including increases in desired social behavior, decreases in undesired social behavior, and increases in academic performance.

Research Question Two

The second research question explored the effects of how time in the TeachLivE™ virtual learning environment, combined with after-action review, impacted pre-service special education teachers' frequency of providing opportunities to respond. After action review can be used for pre-service special education experiences to develop a disposition of collaboration and continuous improvement early, to reflect upon teaching

experiences and to understand why interim objectives were or were not accomplished (Baird, Holland, & Deacon, 1999; Britton & Anderson, 2010).

Overall results regarding opportunities to respond. Participants A,B,C & D were included in the group receiving treatment (N=4) and received individualized after-action review from the researcher following all TeachLivE™ sessions on observed opportunities to respond, with suggestions for future TeachLivE™ sessions. One out of four participants in the treatment group increased overall between the first and last TeachLivE™ sessions in providing opportunities to respond. A +15 increase of overall opportunities to respond was noted as the highest in rate of change with Participant A. Participants B, C, & D decreased between the first and last sessions resulting in a -5, -2, and -1 respectively.

Original opportunities to respond. Three out of four participants in the treatment group increased in providing original opportunities to respond between the first and last TeachLivE™ sessions in providing original opportunities to respond. A +17 increase in original opportunities to respond was noted as the highest in rate of change with Participant A. This data also correlated with her decrease in use of suggested questions. While her original opportunities to respond vastly increased, her suggested opportunities to respond decreased to 0 by the final TeachLivE™ session. Data was similar for Participants' B & C when looking specifically at increases of original opportunities to respond and decrease in suggested opportunities to respond.

Participant A also increased in other specific areas including yes/no and management related opportunities to respond.

Participants B and D noted a slight increase in original opportunities to respond with an overall change of +1. Although there was only a slight final improvement, both participants noted increases between +4 and +5 between the first and second sessions. This data suggests that after-action review impacted participants ability to provide opportunities to respond, but perhaps not to as great of an overall extent as Participant A. Participants C had a -6 overall change in providing original opportunities to respond between the first and last sessions. Although this participant peaked with a +6 increase between session one and two, a vast decrease occurred in subsequent sessions. This data suggests that after-action review decreased or ceased to manifest itself with this individual participant.

Management related opportunities to respond. Three out of four participants (A, C, & D) in the treatment group increased in their overall use of management related opportunities to respond by at least 50%. Participant B peaked in session two with an increase of +4, but decreased -3 by the final session. This data may imply that occasions for management related opportunities to respond spontaneously occurred during TeachLivE™ sessions and that the virtual avatar students' individual behavior and lesson plan needs differed during each session.

Behavior related opportunities to respond. Lotter, Singer, & Godley (2009), suggested that pre-service teachers tend to focus more on behavioral management and

classroom survival rather than addressing specific academic issues emerging in the classroom. In terms of this specific study, this was not found to be the case. When looking specifically at behavior related opportunities to respond, all participants were scattered in terms of results. Two participants (A & B) peaked in the first two sessions and then dropped in the concluding sessions while the other participants (C & D) fluctuated during all sessions and failed to maintain a steady trend. No specific patterns were noted within this specific variable, which indicates more academic than behavior related opportunities to respond were made during the TeachLivE™ sessions.

Suggested opportunities to respond. All but one participant decreased in their use of suggested questions (A, B, & C). Participant A, who decreased use of suggested opportunities to respond from +5 to 0 by the final TeachLivE™ session, saw the greatest decrease in this category. Participants' B & C decreased by -7 and -1 respectively. This data may suggest that after-action review may have impacted these specific participants. Conversely, Participant D noted an overall increase of +2 between the first and final sessions.

Yes/no opportunities to respond. Two of the four participants in the treatment group noted an overall decrease in providing yes/no opportunities to respond. This data suggests that over time, opportunities to respond for these two participants changed from yes/no questions and included more original open-ended response questions and that these particular participants internalized after-action review and utilized suggestions and

feedback from the researcher to change the way in which opportunities to respond were provided within the TeachLivE™ virtual learning environment.

Research Question Three

The final research question in this research study focused on how pre-service special education teachers' perceived their experiences within the TeachLivE™ virtual learning environment, specifically in regards to how it impacted their overall teaching practices. Beliefs and personal attitudes shape who teachers are as individuals and the types of decisions they make in the classroom.

Teacher sense of efficacy scale. On a daily basis, teachers' attitudes influence a school's social environmental factors (Kaufman & Ring, 2011). Teachers' sense of efficacy has been correlated to student outcomes such as achievement, motivation, and students' own sense of efficacy (Anderson, Greene, & Loewen, 1988; Armor, et al., 1976; Ashton & Webb, 1986; Midgley, Feldlaufer, & Eccles, 1989; Moore & Esselman, 1992; Ross, 1992;). When analyzing the *TSES* and self-reflection collectively, the participants reported a positive experience and began to reflect on teaching practices. All participants increased in their pre-/post- scores from the beginning to the end of the research study. This may indicate that participants had strengthened feelings of efficacy and felt more confident in student engagement, instructional strategies, and classroom management as a whole. When comparing this with self-reflection data, a trend was also noticed in regards to participants feeling more connected to the students. This also may reflect progression of individualized self-efficacy.

Self-reflections. Self-reflection on practice encourages teachers to revisit instructional experiences and maximize the construction of meaning as a critical first-step for improved instruction, which may allow for recognition of areas that need strengthening, consideration of alternatives, and reconstruction of teaching actions (Collet, 2012). It can also bridge experience and learning, pushing one to critique unexamined assumptions and beliefs, involve a shift in thoughts, feelings, and behavior and lead to active inquiry which allows for critique of past beliefs and actions and to formulate plans for future actions (Mezirow, 2003; Kitchenham, 2008).

Qualitative data was collected through self-reflections from all eight participants immediately following all TeachLivE™ session. Data was analyzed through NVivo qualitative analysis software. Words and phrases within each participant's self-reflections were coded into the appropriate themes and are represented in overall percentages including: 1) positive comments, 2) negative comments, 3) things to change for the next session, and 4) feelings of providing opportunities to respond. Self-reflection data from participants included specific student characteristics and how to better incorporate those individualized needs into their teaching. This was especially noticeable with specific comments from the treatment group regarding deliberation of pedagogical strategies. Many participants indicated changes that needed to be made in the way that opportunities to respond were provided. This self-reflection data may infer after-action review was an effective tool that allowed for further reflection beyond participants thinking processes and knowledge base.

Positive statements. 17.43% of all comments from each participant (N=8) were coded and deemed positive including words and phrases such as: “Left with a better overall connection to the students”, “Really started to see what each student was doing while we were discussing and I noticed things that they would do when I was speaking to them specifically”, “Connecting with the students with examples was more beneficial to me as the teacher”, “I had accomplished something which I never thought I could do”, “I can see and feel the progress I am making in my responses to the students”, and “I truly enjoyed my Teachlive (sic) session because it is just incredible how interactive the students are!”. This data suggests that throughout each session, participants continued to gain confidence in their teaching and felt more connected to the students. This also may reflect progression of individualized self-efficacy.

Negative statements. Comparably, only 3.66% of the self-reflection data coded was negative. Common themes from nearly all participants included comments such as: “I was a bit nervous today”, “I started off nervous”, “Was hoping that I would not get too tongue tied…” As TeachLivE™ sessions progressed, comments became more specific in regards to teaching practices such as: “Disappointed did not have opportunity to engage more with Maria”, “I could have used more open-ended responses to other students rather than just Sean”, “I still have a feeling of missing something during the delivery of my lecture”, and “I was afraid if students asked questions that I could not answer I wouldn’t know what to do”. This data suggests that participants didn’t perceive their experiences within the TeachLivE™ virtual learning environment as negative and when they did, they

were self-reflecting on how to improve specific aspects of their lesson delivery and/or interaction with the virtual students.

Things to change. 21.81% of the self-reflection data coded reflected teaching related practices that the participants wanted to change for their next TeachLivE™ session. This data showed that the pre-service special education teachers were focusing on specific things to enhance during their next TeachLivE™ sessions. One common theme that continued to emerge was specifically directional in regards to the student avatar Maria. Self-reflection for Maria included: "Keep getting Maria involved", "Try to incorporate everyone because I left Maria out today", "Have opportunity to interact with Maria more", "I would like to see if I could connect with Maria more", and "Come up with some sort of intervention to get Maria to come out of her shell and not be afraid to speak up or out to the class".

Overall feelings of providing opportunities to respond. Lastly, overall feelings of providing opportunities were coded with a representation of 17.74%. Participant self-reflections in the treatment group receiving after-action review specifically in response to their frequency of providing opportunities to respond shared: "I took my time when asking the class questions and gave examples of what it was for so the students would have a better understanding", "I feel I could have given more wait time as they begin to talk", and "I could have used more open-ended questions". This data suggests participants in the self-reflection group deliberately thought about how they were providing opportunities to respond and took the time to think about how to change it for

their subsequent TeachLivE™ sessions. This also suggests that the after-action review was indeed an effective tool that allowed for further reflection beyond their own thinking processes and knowledge base.

Participant self-reflections from the control group stated: “Each student had a chance to talk at least once whether it was me calling on them or them raising their hand and being called upon. I also felt that if I had completely shut down their responses that they wouldn’t speak anymore, so with this, I asked a deeper question to get them to elaborate”, and “I felt as if I gave all students a chance to speak, however, when probing, I did not always provide room for students to make connections. I feel as if my questions were not always clear”. This data suggests that although participants were realizing that they needed to make some changes in the way that they were providing opportunities to respond, they perhaps needed guidance (such as after-action review) to assist in specific areas and instances of how to better improve.

Triangulated data. When looking at quantitative and qualitative data collectively, three common themes emerged. First, participants A, B, & D who were in the treatment group decreased in scripted opportunities to respond and simultaneously increased in providing original opportunities to respond. With participants included in this trend, self-reflection and self-efficacy data also disclosed increased positive tendencies as well as pedagogically based deliberations.

Secondly, self-reflection data consistently referenced the student avatars Maria, C.J. and Sean. In total, Maria was mentioned 12 times, C.J. 10 times, and Sean 8 times

within all eight participant reflections. Participants specifically spoke in terms of Maria about how to better get her more academically engaged in the lessons and how to connect with her on a more personal level. Reflections regarding C.J. and Sean were directed towards how to motivate C.J. to keep her cell phone put away to become more interested in school, and how to direct Sean's discussion so that he did not take over class discussions. This data infers that participants took note of individual student personalities within the classroom and reflected on how to best engage the learners.

With additional sessions in the TeachLivE™ virtual learning environment, it is inferred that participants would continue these types of trends and eventually begin to make pedagogical changes that would a) increase teacher/student interactions with Maria to engage her in how she best learns, b) motivate C.J. to become more engaged in the lessons by providing higher rates of opportunities to respond which may decrease the behaviors seen with her cell phone, and c) increased awareness of appropriate classroom management strategies to allow for all students to become involved and highly engaged in the lesson.

Limitations

Although the research within this study resulted in rich qualitative data and themes through triangulation of data, limitations to the study were found and must be discussed. Two significant limitations within this study were the number of participants and duration of the study. Eight participants were scheduled for five sessions; however, sessions were lost due to inclement weather resulting in a decrease of one to two sessions

for all participants. This limitation may have impacted significance of the data collected in terms of the rate of change among the participants in the treatment group receiving after-action review.

There was also a variation in the participants in terms of completion of the teacher preparation program. Although all of the participants had been formally admitted into the teacher education program, three participants were getting ready to student teach (B, C, & E), whereas five participants (A, D, F, G, & H) still had remaining coursework to complete prior to student teaching.

Implications for Future Research

There are a number of benefits to continuing or using pre-service special education teachers within the TeachLivE™ virtual learning environment. In order to adequately prepare teachers to effectively deliver evidence-based interventions with students who have disabilities, it is imperative that programs deliver quality opportunities for preparation methods and development (Garland, 2012). The curriculum of teacher education requires a shift in focus from what teachers know to a greater focus on what teachers do (Ball, 2000; Ball, Hill, & Bass, 2005). Continuation of research based on the results within this study on how to develop specific teaching skills in virtual learning environments over time will benefit teaching outcomes and teacher preparation programs as a whole, as well as allow for the ability to observe the individualized presence or absence of skills among pre-service special education teachers.

Because virtual learning environments such as TeachLivE™ have the potential to make a significant impact on the way pre-service special education teachers are prepared for teaching, it is important to consider a longitudinal research study following pre-service teachers' throughout the course of their entire teacher preparation program and into their first year and subsequent years of teaching. A longitudinal study such as this would be beneficial to see the specific long-term impacts that the TeachLivE™ virtual learning environment may have on individualized teaching practices. This, in combination with after-action review and continual participant self-reflection, could enhance the field's understanding of the utility and usefulness of the TeachLivE™ virtual learning environment.

Conclusion

Findings concluded that 3 out of 8 participants improved in their overall ability to provide opportunities to respond within the TeachLivE™ virtual learning environment throughout the duration of this research study. Of these participants who made improvement, 1 was included in the treatment group receiving after-action review and 2 were in the comparison group. Improvement was made with all participants (N=8) between pre- and post- TSES scales regarding personal feelings of teaching efficacy. Self-reflections noted positive experiences with participants reflecting on how to better meet the needs of the students in the virtual classroom. Results from this study support the continued use of TeachLivE™ as an effective tool for preparing pre-service special

education teachers, allowing for the opportunity to impact teaching practices such as opportunities to respond.

Overall, TeachLivE™ is an emerging learning environment that has the potential to pinpoint and allow for individualized teaching and learning. As research studies continue to transpire regarding its effectiveness, one can assume that implications for practice and use will continue to emerge. Valuable preparation for future special education teachers is crucial and it is up to teacher preparation programs to utilize and facilitate experiences, such as TeachLivE™, to prepare pre-service special education teachers. By providing individualized experiences and working on specific learning strategies that will enhance and promote effective teaching practices in a classroom such as specific teaching practices or classroom management strategies, educators are preparing teachers who will be able to more effectively serve students in special education.

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APPENDIX A

Letter of IRB Approval

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON

Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378 FAX 940-898-4416
e-mail: IRB@twu.edu

October 21, 2013

Ms. Maria B. Peterson
Teacher Education

Dear Ms. Peterson:

Re: Pre-Service Special Education Teachers' Frequency of Opportunities to Respond Within the TeachLive™ Virtual Classroom (Protocol #: 17464)

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and appears to meet our requirements for the protection of individuals' rights.

If applicable, agency approval letters must be submitted to the IRB upon receipt PRIOR to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp is enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. A copy of the signed consent forms must be submitted with the request to close the study file at the completion of the study.

This approval is valid one year from October 21, 2013. Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

Sincerely,

Rhonda R. Buckley

Dr. Rhonda Buckley, Chair
Institutional Review Board - Denton

cc. Dr. Jane Pemberton, Department of Teacher Education
Graduate School

APPENDIX B

Participant Handbook

TeachLivE™ Participant Handbook

What is to be expected?

1. Your Role as the Participant
    a. You will practice teaching within the TeachLivE™ virtual classroom over five separate, ten-minute sessions.
    b. Please ensure that you arrive at least 5 minutes prior to the start time of your TeachLivE™ session. If you have questions regarding the time that you are scheduled, please contact me as soon as possible by email or phone
2. TeachLivE™ Session Preparation
    a. You will receive the lesson that you will be teaching during all of your TeachLivE™ lessons today.
    b. Please read through the lesson prior to your TeachLivE™ sessions, ask questions from me as needed, and come prepared to the lab with any materials, handouts, etc. that you would like to use.
3. TeachLivE™ Involvement
    a. You will be interacting with computer generated middle-school students.
    b. The TeachLivE™ lab is a setting that resembles a real classroom, however, is virtually simulated. This means that even though the students look like virtual avatars, the interpersonal exchange between you, the participant, and the students happen in real time with actual interaction.
4. Flexibility
    a. I will do my best to make your TeachLivE™ sessions run as smoothly as possible, however, when dealing with technology the unexpected may occur. Please be patient if this does happen, as I will do my best to resolve the issue as quickly as possible.
5. Study Specifics
    a. The researcher has specified a lesson for you to teach during your time in the TeachLivE™ lab. You will all be self-reflecting immediately after each session. Some of you will be meeting with the researcher following your self-reflection for an after-action review.
        i. Your self-reflections will be collected after each session.

When You Arrive to Your TeachLivE™ Lab Session

- When you arrive to your scheduled TeachLivE™ lab sessions, please check in with the researcher. She will be in Stoddard Hall 117. Plan to arrive at least 5 minutes early to your session.
- When it is your TeachLivE™ lab session time, the researcher will set you up with a microphone and discuss any applicable objectives with you.

    - Please make sure to have all electronic devices turned to silent while you are in the TeachLivE™ lab.
- You will spend ten minutes interacting with the student avatars in the TeachLivE™ lab. You will teach the lesson that has been provided to you during this time.
    - Should you have any questions during your time in the TeachLivE™ lab, the researcher will be closely monitoring you next door in Stoddard Hall 117.
    - You will have a timer in the TeachLivE™ lab assisting you with how much time is remaining in your session.
    - The researcher will also inform you when your session is complete.
    - At any point during your TeachLivE™ lab session you may voluntarily leave.
- Following your TeachLivE™ lab session, please plan to spend about 5 minutes self-reflection
    - For those of you that will be meeting with me your after-action review, please plan to spend about 10 minutes after your self-reflection following each session.
- Confirm your next TeachLivE™ lab time/date.
- Complete your self-reflection prior to your next TeachLivE™ lab session.

What is an 'Opportunity to Respond'?

- When providing verbal prompts or questions with the intent of evoking an academic response, teachers deliver opportunities to respond (Cavanaugh, 2013).
- These opportunities have been shown to increase student engagement with academic tasks, decrease problem behavior, and improve student achievement (Conroy, Sutherland, Snyder, & March, 2008; Haydon, T., Conroy, M., Scott, T., Sindelar, P., Barber, B., & Orlando, A. 2010; Stichter, Lewis, Whittaker, Richter, Johnson, & Trussel, 2009; Sutherland, Alder, & Gunter, 2003).

If you are interested in reading related literature, I have listed some articles regarding opportunities to respond below:

1) Cavanaugh, B. (2013). Performance feedback and teachers' use of praise and opportunities to respond: A review of the literature. *Education and Treatment of Children, 36*(1), 111- 137.
2) Stichter, J. P., Lewis, T. J., Whittaker, T. A., Richter, M., Johnson, N. W., & Trussell, R. P. (2009). Assessing teacher use of opportunities to respond and effective classroom management strategies comparisons among high-and low-risk elementary schools. *Journal of Positive Behavior Interventions, 11*(2), 68-81.

3) Sutherland, K. S., Alder, N., & Gunter, P. L. (2003). The effect of varying rates of opportunities to respond to academic requests on the classroom behavior of students with EBD. *Journal of Emotional and Behavioral Disorders, 11*(4), 239-248.

There are different types of opportunities to respond:

1- Academic
Example: What are the different parts of a plant?
2- Management
Example: What items should we have on our desk to be prepared for this lesson?
3- Behavior
Example: What should we do as we walk down the hallway?

Self-Reflection Questions

Each week after your TeachLivE™ lab session and after-action review with the researcher, you will be asked to self-reflect. Here are examples of questions that will assist you as you self-reflect:

1. What was your TeachLivE™ lab session experience like this week?
2. Describe things that went well during today's TeachLivE™ lab session.
3. What things would you like to do differently next time?

Please note that self-reflections will be collected after each session.

After-Action Review

After your TeachLivE™ lab sessions, some of you will meet with the researcher to receive post-session after-action review. Below are examples of what the researcher may discuss with you during this time. After-action review sessions will last approximately 5 minutes and will also be an opportunity for you to ask any questions you may have.

1. What aspects of the lesson did you feel went well?
    a. Researcher will provide feedback to you
2. What aspects of the lesson do you feel you'd like to do differently next time?
    a. Researcher will provide feedback to you
3. Researcher will provide specific feedback regarding opportunities to respond.

Lesson Plan

Lesson 3

At-a-Glance

Lesson 3: Making Good Choices

Give an advance organizer

1. Review the previous lesson.

2. State the purpose of the lesson. To talk about making good choices. To explore how personal power is affected by our choices.

3. State your expectations. To listen carefully and actively participate.

Introduce and describe

1. Introduce the concept of choice. What does the word "choice" mean? (Deciding between two things, making a decision about something.) What choices do geese have as they fly south for the winter? (They choose when to fly point and when to rotate back; they choose whether to go it alone or stay with the flock.) What are some choices you make every day? (What to wear, what to eat.) What are some choices you make in this class related to our expectations? (Whether to listen, whether to speak.)

2. Define "personal power." When you hear that someone has personal power or is powerful, what do you think that person is like? (He has a lot of control over his life.) What do you think the term "personal power" means? (The control we have over our own lives.)

3. Explain the relationship between choices, consequences, and personal power. Whenever we make a choice, a consequence will follow that impacts our personal power. If a goose flying south chooses to fly alone, what could be some of the consequences of that choice? (The goose would have more work; it could get lost.)

4. Introduce the E+B+C → Personal Power Formula. This formula helps you see how your choices impact your personal power.

5. Define "Event." In the formula, "E" stands for "Event." The event is what happens first that leads you to choose an action. Give an example.

6. Define "Behavior." In the formula, "B" stands for "behavior," which is how you act. Give an example.

7. Define "Consequence." In the formula, "C" stands for "consequence," which is what happens to you and/or to others right after your behavior. Give an example of consequences based upon both good and bad behaviors.

8. Explain "Personal Power." Personal power is affected by the choices we make. Making good choices about how to behave increases personal power. Making poor choices about behavior causes a loss of personal power.

9. Introduce the personal power questions. To help decide whether a behavior will lead to personal power, ask these questions: If I choose this behavior, what will the consequences be? How will this action affect my personal power? With this action, am I living up to our learning community expectations? and How will this action affect other people?

10. Discuss the E+B+C → No Personal Power Example. Guide students through this example to help them understand the parts of the formula.

11. Discuss the E+B+C → Personal Power Formula example. Guide students through this example to help them understand the parts of the formula.

Conduct practice activities

1. Conduct verbal rehearsal of the EBC Power Formula. As a group, quickly review what each part of the formula stands for. Then, have partners practice stating the formula and telling the meaning of each part. Finally, quickly check that each student can name the formula and its parts.

2. Explain and demonstrate the EBC Power Activity (pp. 83-85) if you are using it. Read the EBC Power Activity Directions, page 61, aloud. Call on a group of four students to help demonstrate the activity.

3. Conduct the EBC Power Activity.

4. Conclude the EBC Power Activity.

5. If using the *EBC Power Worksheet* (pp. 86-87), distribute the worksheet and explain what to do.

6. Have students complete the worksheet.

7. Have students share their answers.

Give a post-organizer

1. Review the E+B+ C → Power Formula. What does E mean? (Event.) What does B mean? (Behavior.) What does C mean? (Consequence.) In which part of the formula does choice occur: E, B, or C? (B.) How does choosing the right behavior give you power? (You are free to do things with others; you don't have to stay in one place.) What are the four general questions you should ask yourself before choosing an action? (What will the consequences of my action be? How will this action affect my personal power? Does this action violate a learning community expectation? and Will this action affect others?)

2. Preview the next lesson. To learn the FOCUS Strategy.

Play-by-Play

Lesson 3: Making Good Choices

Goals

- To define "choice"
- To explain the E+B+C → Personal Power Formula
- To examine the relationship between choice and consequences
- To practice analyzing behavior and consequences according to the Personal Power Formula
- To explain how choices impact personal power

Materials

- *Cue Card #2, Unit Map* (overhead transparency)
- A large writing surface, chalkboard, or overhead projector
- Chalk or overhead pens
- Markers or crayons
- Pencils
- *Cue Cards #4-8* (pp. 57-61) (overhead transparencies and one copy per student)
- *EBC Power Activity Cards* (pp. 83-85) (one complete set of cards)
  OR
- *EBC Worksheet* (pp. 86-87) (one copy per student)
- Five envelopes for storing activity cards

Preparation

1. Review the instructional procedures.

2. Decide which practice activity students will complete. The EBC Power Activity (pp. 83-85) is more "action oriented," and thus may be more appropriate for younger students. The *EBC Worksheet* (pp. 86-87) is more solitary, and thus may be more appropriate for older students. If you have time, consider using both activities.

3. Prepare practice materials.

If using the *EBC Power Activity Cards*:

- Make one copy of the cards. Note that the back of all cards should be blank.
- Separate the cards by cutting on the heavy black lines.
- Set the example cards aside to be used to demonstrate how students will use them.
- Separate the remaining cards by situation number and place each group of cards in a separate envelope. That is, place all Situation 1 cards in one envelope, all Situation 2 cards in another envelope, all Situation 3 cards in another envelope, and so forth, until all cards are sorted.

If using the *EBC Worksheet*:

- Make one copy of the worksheet for each student.

Key Vocabulary

Choice Powerful Personal power Event Behavior

Give an advance organizer

1. Review the previous lesson. "During our last lesson, we talked about classroom expectations. We identified the benefits of meeting those expectations and the negative consequences of not living up to them. We also made a list of ways to celebrate when we meet the expectations."

(Refer students to the expectations poster, and recite, as a group, the expectations that were agreed upon and practiced during the last lesson.)

2. State the purpose of the lesson. *(Display Cue Card #2, the Unit Map, and point to "Making Good Choices.")* "Today we are going to talk about the second component of self-management, which is making good choices. First, you will learn a formula that describes what happens when you make a choice. Second, you will use this formula to identify how the kinds of choices you make can impact your personal power. Third, you will have a chance to participate in an activity to explore how your personal power is affected by the choices you make."

3. State your expectations. "Please listen carefully and participate actively in the discussions and activities."

Introduce and describe

1. Introduce the concept of choice. "Who can tell me what the word 'choice' means?"

- ✔ Deciding between two things.
- ✔ Making a decision about something.
- ✔ Deciding what to do from a list of options.

"Once again, let's think about the geese in 'Lessons from the Geese.' They belong to a community called a flock. What choices do you think geese might have as they fly south for the winter?"

- ✔ They choose when to fly point and when to rotate back.
- ✔ They choose whether to go it alone or stay with the flock.
- ✔ They choose to stay behind with an injured goose.
- ✔ They choose when to rest.
- ✔ They choose what direction to fly.
- ✔ They choose how to fly in relation to other geese.

"Who can name some choices you make every day?"

- ✔ What to wear.
- ✔ What to eat.
- ✔ What we think about.
- ✔ How we treat people.

"What are some choices you make in this class related to our expectations?"

- ✔ Whether to listen.
- ✔ Whether to signal to speak.
- ✔ Whether to come prepared.

2. Define "personal power." "When you hear that someone has personal power or is powerful, what do you think that person is like?"

✔ He has a lot of control over his life.

✔ He has confidence.

✔ He's in charge of something important/has lots of choices.

"Great ideas. 'Personal power' is the control we have over our own lives. It refers to the ability to make sure good things happen in our lives."

3. Explain the relationship between choices, consequences, and personal power. "Whenever we make a choice, a consequence follows that impacts our personal power. Who remembers what a 'consequence' is?"

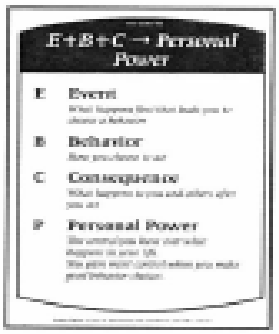
✔ Something that happens after we act.

"Right. A goose flying south can choose to go it alone. What do you think might be some consequences of that choice?"

✔ The goose would have more work.

✔ The goose could get lost.

✔ The goose might get lonely.


E+B+C → Personal Power

E Event

B Behavior

C Consequence

P Personal Power

4. Introduce the E+B+C → Personal Power Formula. "Our choices about our behaviors always lead to consequences. Sometimes consequences are positive, but sometimes they are negative. However, they **always** impact our personal power. We are going to use a formula to help us understand how the choices we make impact our personal power." *(Display an overhead transparency of Cue Card #4, and DISTRIBUTE a copy to each student.)*

5. Define "Event." "In this formula *(point to the formula at the top of Cue Card #4)*, 'E' plus 'B' plus 'C' leads to 'Personal Power,' the 'E' stands for 'event.' The event is something that happens first, after which you may choose to act. For example, an event might be that your friend hits a home run. If you notice that event, you can choose to act, or do something."

6. Define "Behavior." "Also in the formula, the 'B' stands for 'behavior.' Your behavior is how you act. For example, after your friend hits a home run, you might congratulate her and give her a 'high five.' Alternatively, you could choose to do nothing, or tell her that you could have hit the ball farther."

7. Define "Consequence." "The 'C' in the formula stands for 'consequence.' The consequence is what happens to you and/or to others because of your behavior. With the home run example, if you choose to congratulate your friend, what might happen?"

✔ My friend will want to be around me.

✔ My friend will be happy for me when I do something well.

"What might the consequence be if you tell her that you could hit the ball farther?"

✔ She might not like being around me.

✔ She might avoid me.

8. Explain "Personal Power." "This formula means that how you behave in reaction to the events around you and the consequences of your actions will impact your personal power. So again, what do you think 'personal power' is?"

✔ It means that you have power over yourself.

✔ It means you have control over what happens to you.

✔ It means you have control over meeting your goals.

"Exactly. Personal power means that each person can have power or control over what happens to him or her and over meeting personal goals. This formula shows that personal power is affected by the choices we make. Making good choices about how you will behave *(point to the "B" on the cue card)* increases your personal power. Making poor choices about behavior causes you to lose your power. In the home run example, you might have a personal goal of having friends and wanting to be invited to go places and do things with them. If you congratulate your friend, you will be more likely to achieve that goal than if you put your friend down."

9. Introduce the personal power questions. "To help you decide whether a behavior that you choose will lead to personal power, there are four general questions you can ask yourself."

"First, you can ask yourself, 'What will the consequence of my action be?'" *(Display Cue Card #5 and point to the first question.)* "Remember, consequences can be good and bad. If the consequences will be bad, the action is probably not going to lead to personal power, so you should choose a different action."

"Second, you can ask yourself, 'How will this action affect my personal power?'" *(Point to the second question.)* "If an action is going to limit your personal power in some way, you should probably choose a different action."

"Third, since you are a part of a learning community, you can ask yourself, 'With this action, am I living up to our learning community expectations?'" *(Point to the third question on Cue Card #5.)* "If an action is going to violate a learning community expectation, you should definitely choose a different action."

"Fourth, always ask yourself how an action will affect other people." *(Point to the fourth question on Cue Card #5.)* "If the action is going to hurt other people or prevent them from learning, you should choose a different action. However, if the action is not going to hurt other people or violate a learning community expectation, you can probably safely make that choice."

10. Discuss the E+B+C → NO Personal Power Example. "Let's look at two examples of an event, a behavior, the resulting consequences, and the personal power questions." *(Display Cue Card #6 to show the "NO" Personal Power Example. Guide students through this example to help them understand the parts of the formula.)*

"E stands for the event. Joe needs to complete a big project for homework. However, Sam calls and asks him to go to a movie. What is the event that Joe can choose to respond to?"

✔ Sam calls and asks him to go to a movie.

"That's right. The event is that Sam asks Joe to go to a movie." *(Underline "Sam calls and asks him to go to a movie.")*

"B stands for the behavior. Joe goes to the movie and does not do his homework. What behavior does Joe choose?"

✔ He goes to the movie and doesn't do his homework.

Lesson 3

"Right again! The behavior Joe chooses is to go to the movie and not do his homework." *(Underline "Joe goes to the movie and does not do his homework.")*

"C stands for the consequence. The project does not get done. Thus, Joe has to stay after school to complete the work. As a result, he misses baseball practice and cannot pitch in the upcoming game. The first personal power question asks, 'What are the consequences of Joe's behavior?' "

- ✔ The project wasn't completed.
- ✔ He had to stay after school to complete the project.
- ✔ He missed baseball practice.
- ✔ He couldn't pitch in the upcoming game.

"Excellent. You are right again! Joe's behavior resulted in several negative consequences. The project wasn't finished. He had to stay after school. He missed baseball practice, and he couldn't pitch in the upcoming game." *(Underline each consequence as it is stated.)*

"The second personal power question asls, 'How did Joe's choice affect his personal power?' " *(Write appropriate student responses on the board.)*

- ✔ His personal power decreased. He was not successful on the project, he had to stay after school, he missed baseball practice, and he couldn't pitch in the upcoming game.

"Very good. Joe had to stay after school to complete the project and was not able to attend baseball practice. Thus, by *not* making a good choice, he lost personal power."

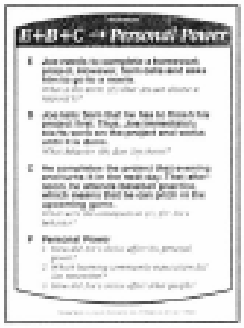
"The third personal power question asks, 'Which learning community expectation did Joe forget?' "

- ✔ Begin work promptly + stay on task + work until done.

"That's right. Even though Joe was at home, he knew his project was due. Thus, he should have begun his work promptly and stayed on task and worked until he was done." *(Write, "Begin work promptly + stay on task + work until done" on the board.)*

"The fourth personal power question asks, 'How did Joe's choice affect other people?' "

- ✔ It may have affected his teammates because he didn't get to practice with them.
- ✔ Somebody else got to pitch in the game.



11. Discuss the E+B+C → Personal Power Formula example. "Let's look at another example." *(Display Cue Card #7. Guide students through this example to help them understand the parts of the formula.)*

"E stands for the event. Joe needs to complete a homework project. However, Sam calls and asks him to go to a movie. What is the event that Joe can choose to respond to?"

- ✔ Sam calls and asks him to go to a movie.

"That's right. The event is that Sam asks Joe to go to a movie." *(Underline "Sam calls and asks him to go to a movie.")*

"B stands for the behavior. Joe tells Sam that he has to finish his project first. Thus, Joe immediately starts work on the project and works until it is done. What behavior does Joe choose?"

✔ To work on the project and finish it.

"Right again! The behavior Joe chooses is to get to work on his project and finish it." *(Underline "Joe immediately starts work on the project and works until it is done.")*

"C is the consequence. He completes the project that evening and turns it in the next day. That afternoon, he attends baseball practice, which means that he can pitch in the upcoming game. The first question asks, 'What were the consequences of Joe's behavior?'"

✔ The project was completed.

✔ He attends baseball practice.

✔ He's able to pitch in the upcoming game.

"Excellent. You are right again! Joe's behavior resulted in several positive consequences. The project was finished, he attended baseball practice, and he was able to pitch in the upcoming game." *(Underline each positive consequence as it is stated.)*

"The second personal power question asks, 'How did Joe's choice affect his personal power?'" *(Write appropriate student responses on the board.)*

✔ He got control over what he wanted to do.

✔ He got to do what he wanted to do after school.

"Very good. You did a nice job of identifying the event, the behavior, and the consequences in this second example. I think you see how making the right choice can give you personal power. By making the right choices, others will want to be around you."

"The third personal power question asks, 'Which learning community expectations did Joe remember?'"

✔ Begin work promptly + stay on task + work until done.

"The fourth personal power question asks, 'How did Joe's choice affect other people?'"

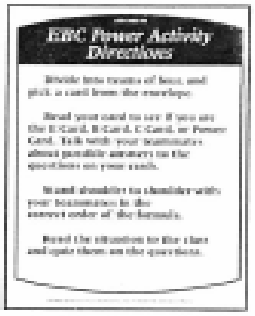
✔ It may have affected the outcome of the game if he was a good pitcher.

Conduct practice activities

1. Conduct verbal rehearsal of the EBC Power Formula. "In a few minutes, you will work together in an activity that will help you understand how to use each part of the formula. Before we do that, let's quickly review the parts of the EBC Personal Power Formula. Finish my sentences. Everyone: The formula is ... 'E' stands for ..., 'B' stands for ..., 'C' stands for ..., 'P' stands for ..."

"Now turn to your neighbor and take turns stating the formula and telling the meaning of each part. Use *Cue Card #4* to take turns naming the formula and its parts. Raise your hand when each partner is able to recite the formula and its parts without looking at the cue card." *(Circulate and quickly check that each student can name the formula and its parts. Give students as many times as necessary to recite the formula and its parts.)*

Lesson 3


EBC Power Activity Directions

Divide into teams of four, and pick a card from the envelope.

Read your card to see if you are the E Card, B Card, C Card, or Power Card. Talk with your teammates about possible answers to the questions on your cards.

Stand double to consider with your teammates in the correct order of the formula.

Read the situation to the class and take turns on the questions.

Answer Key
EBC Worksheet

Situation 1
2 Event
1 Behavior
3 Consequence
Learning expectations: b, c

Situation 2
3 Event
2 Behavior
1 Consequence
Learning expectations: a

Situation 3
2 Event
3 Behavior
1 Consequence
Learning expectations: e

Situation 4
3 Event
2 Behavior
1 Consequence
Learning expectations: f

Situation 5
3 Event
2 Behavior
1 Consequence
Learning expectations:
b, c, d

2. If using the EBC Power Activity (pp. 83-85), explain and demonstrate what to do. "To help you understand each part of the formula, you will now work in teams of four. I will give each team an envelope with a set of cards about a situation. Here is what you'll do." *(Show Cue Card #8: EBC Power Activity Directions. Read the directions aloud. Call on a group of four students to help demonstrate the activity. Give each person one of the four "Example" cards from p. 83. Have students stand in the same sequence as the EBC Power Formula based on the cards they are holding. Next, have each student read in turn the situation and the question on his or her card to the rest of the class. Help the class answer the question, if necessary.)*

3. Conduct the EBC Power Activity. "Now let's do this activity. *(Divide students into groups of four and DISTRIBUTE one envelope of cards to each group. Ask the groups to review the cards in their envelopes and to answer the questions themselves. Then, have each group stand in front of the class, read their cards aloud, and ask the questions on the cards to the other students. Allow 10-15 minutes for the activity.)*

4. Conclude the EBC Power Activity. *(Have students place the cards back in their envelopes and collect the envelopes.)* "Very good. I hope you enjoyed this activity and see how making right choices can give you personal power."

5. If using the *EBC Power Worksheet* (pp. 86-87), distribute the worksheet and explain what to do.

6. Have students complete the worksheet. If you wish, allow students to complete the worksheet with a partner.

7. Have students share their answers. An answer key is in the margin to the left.

Give a post-organizer

1. Review the E+B+ C → Power Formula.

"In the Power formula, what does E mean?"

✔ Event – What happens before your behavior

"What does B mean?"

✔ Behavior – How you choose to act

"What does C mean?"

✔ Consequence – What happens to you and others after you act

"In which part of the formula does choice occur – E, B, or C?"

✔ B.

"How does choosing the right behavior give you power in the learning community?"

✔ You get to participate in class.

✔ Other people want to be around you.

"What are the four general questions you should ask yourself before choosing an action?"

✔ What is the consequence of my action going to be?

✔ How will this action affect my personal power?

✔ With this action, am I living up to our learning community expectations?

✔ How will this action affect others?

2. Preview the next lesson. "In the next lesson, I will begin to teach you a strategy called the FOCUS Strategy. The FOCUS Strategy will help you supervise yourself at all times."

Take it a step further

1. Have students create their own situations to go with the formula.

2. Have students keep a log for 24 hours that lists situations during which they were able to use the formula to gain personal power. Have them report back to the class to explain the event, the behavior, the consequences, and how their personal power was affected.

3. Discuss how sometimes making choices requires us to "take the road less traveled" rather than "the easy route." Talk about how consideration of consequences and personal power helps us to make difficult choices.

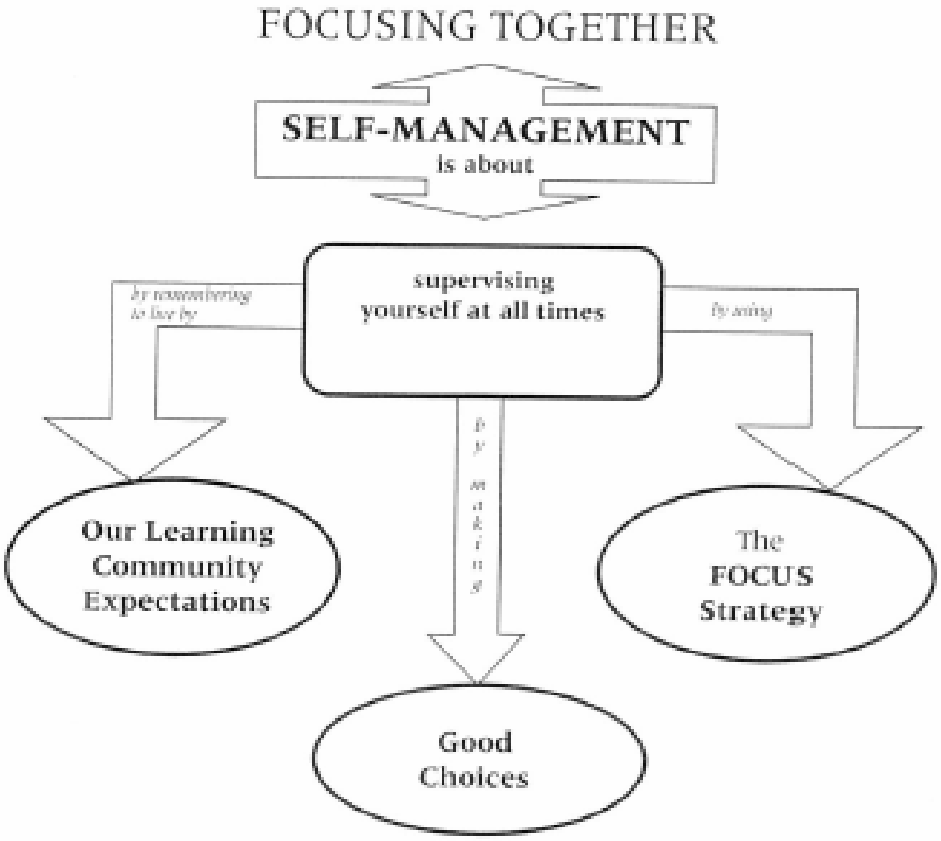
4. Continue to implement the consequences for not remembering to live by learning community expectations, and reward students for remembering the expectations.

So What's Important About This Lesson?

Personal power is important throughout life. Adults make choices each day that support their personal power. Students need to learn the process for making appropriate choices at an early age. This lesson provides a means to do so in an interactive and fun way.

CUE CARD #2

Unit Map



Guiding Questions:

1. Why do members of a learning community need to know what is expected of them?
2. How does making good choices affect your personal power?
3. How will staying focused help you learn?
4. How can we work together to build a strong learning community?

CUE CARD #4

E+B+C → Personal Power

E **Event**

What happens first that leads you to choose a behavior

B **Behavior**

How you choose to act

C **Consequence**

What happens to you and others after you act

P **Personal Power**

The control you have over what happens in your life.
You gain more control when you make good behavior choices.

CUE CARD #5

Personal Power Questions

THINK BEFORE YOU ACT!

1. What will the consequence of my action be?
2. How will this action affect my personal power?
3. With this action, am I living up to our learning community expectations?
4. How will this action affect others?

CUE CARD #6

E+B+C → NO Personal Power

E **Joe needs to complete a big project for homework. However, Sam calls and asks him to go to a movie.**

What is the event (E) that Joe can choose to respond to?

B **Joe goes to the movie and does not do his homework.**

What behavior (B) does Joe choose?

C **The project does not get done. Thus, Joe has to stay after school to complete the work. As a result, he misses baseball practice and cannot pitch in the upcoming game.**

What are the consequences (C) for Joe's behavior?

P **Personal Power**

1. *How did Joe's choice affect his personal power?*
2. *Which learning community expectation did Joe forget?*
3. *How did Joe's choice affect other people?*

CUE CARD #8

EBC Power Activity Directions

Divide into teams of four, and pick a card from the envelope.

Read your card to see if you are the E Card, B Card, C Card, or Power Card. Talk with your teammates about possible answers to the questions on your cards.

Stand shoulder to shoulder with your teammates in the correct order of the formula.

Read the situation to the class and quiz them on the questions.