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Best Practices for Mitigating Gun Violence in School Settings

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Abstract

This manuscript addresses the impact and prevalence of gun violence nationwide in K-12 schools, statistics related to gun violence, and causes of gun violence. Social emotional learning will also be addressed as SEL has a positive impact on enhancing academic, social / emotional, and vocational success, as well as helps students amplify their emotion regulation, communication, coping, conflict resolution, assertiveness skill and levels of optimism. In addition, best practices to mitigate gun violence and foster a safe and secure school climate will be addressed.

Keywords: gun violence, social emotional learning, best practices

Introduction: Definition and Background Information Pertaining to Gun Violence

The question that so many Americans pose: In what ways can we prevent gun violence in K-12 schools? Despite efforts made, there is still no concrete answer to this elusive question as evidenced by the number of school shootings and escalating violence in schools nationwide. There is still work to be done to determine the root causes of school violence from a myriad of vantage points, as this is a multifaceted, systemic, and complex issue. Although schools are supposed to be some of the safest places for students and faculty, over the last 20 years there has been a monumental increase of tragic school shootings taking place across the country (Everytown, 2021). According to the Gun Violence Archive, gun violence is defined as the outcome of all occurrences of death, injury, or threat due to firearms. A school shooting includes an incident using firearms that takes place on school property with key stakeholders present (Gun Violence Archive, 2022). Mass shootings occur in schools when there is a minimum of four people shot, injured, or killed (Gun Violence Archive, 2022). School shootings cause a paralyzing amount of fear, devastation, impede upon learning and growth, and lead to an array of debilitating mental health issues including Post-Traumatic Stress Disorder (PTSD), anxiety, depression, and survivor guilt. As we know, gun violence jeopardizes our basic freedom of right to life. In an effort to protect, advocate for, and support the wellbeing and lives of all, school stakeholders, the community at large, and government officials must collaborate and take a multipronged approach in order to further determine root causes, as well as steps that can be taken to eradicate school shootings moving forward.

School Violence: Impact on Academic Performance and Social Emotional Wellbeing

Everytown for Gun Safety (2022) began tracking school shootings in 2013 to assess the dire impact gun violence has on stakeholders at large. Everytown (2022) has found that gun fire at schools reflects the predominance of gun violence in the country. In regard to impact, experiencing and witnessing gun violence has a deleterious impact on usage of drugs and alcohol, engaging in self-destructive behaviors, mental health disorders, struggles in school academically, emotionally, and behaviorally, as well as are in greater jeopardy for engaging in at-risk activities. Children and teens are gravely impacted by the increase in gun violence.

Additionally, students who are impacted by gun violence are more likely to experience truancy, less likely to graduate or enroll in college, and less likely to be employed (Crawford, 2021). Students who experience gun violence, have a lower GPA and test scores compared to

those who do not. According to Crawford (2021) 1by the age of 24-26, students who experienced a school shooting earned 13.5% less compared to those who attended the same school at a time when a school shooting did not take place. Thus, students who experience school shootings earn $115,550 less over a course of their lives than their counterparts who do not witness a school shooting (Crawford, 2021).

In addition to financial repercussions, the trauma and dire impact of school violence that these students endure is immeasurable. According to Iancu, Jaycox, Acosta, Straub, Iovan, Nelson & Abir (2019), school massacres cause trauma and emotional issues that impact academic performance, reduced attendance, and lower achievement on tests. The researchers indicated that school shootings lead to grief, depression, survivors' guilt, anxiety, addiction, and PTSD (Iancu et al., 2019). These mental health issues can have a dire effect on overall wellbeing. Moreover, according to Chung (2022), school shootings have increased anxiety levels of students, in that students worry that school shootings can happen at their school or any school. Also indicated is that enhanced social media use and ongoing reporting of mass shootings also exacerbate feelings of fear and vulnerability (Chung 2022). In regard to coping with tragic events, providing stability, having consistency, providing an open space for students to process is very helpful (Chung, 2022). Also, screening students, providing resources, collaboration, and helping students to build strength and resilience is integral to their healing.

Also, regarding impact, according to Gupta (2023), students who experience school violence may experience depression, anxiety, or rage. Academic performance suffers due to difficulty focusing due to being in survival mode, which affects attention, concentration, and overall health. Further, the researcher indicated that when students experience trauma their overall perceptions about others change, and they may not believe that they are safe (Gupta, 2023). Students who experience school violence may have difficulty building interpersonal relationships due to lack of trust. As we know, feeling safe, accepted, and included is instrumental for student success.

School Gun Violence: Prevalence and Statistics

In regard to prevalence and statistics, the number of children and teens shot in 2020 increased by more than 1/3 the previous year (Hauck, 2022). Many times, disputes and fights lead to gun violence if one of the people involved possesses a gun. 5.4 million children live in homes with an unlocked firearm; a firearm that isn't securely stored and 80% of those who engaged in school violence took a weapon from their home (Hauck, 2022

According to Everytown (2023), thus far in 2023, there were at least 52 incidents of gunfire on school grounds resulting in 20 deaths and 37 injuries nationally (Everytown, 2023). Additionally, in 2022, there were at least 177 incidents of gunfire on school grounds resulting in 57 deaths and 148 injuries nationally (Everytown, 2022). Also, in accordance with Everytown (2022), between 2013 and 2021, Everytown identified a total of 848 incidents of gun fire on school grounds. Of these occurrences, 573 took place in a pre-school, elementary, middle or high school leading to 188 deaths and 392 people wounded. Nearly half of these victims were students (Everytown. 2022). Although mass shootings in schools may not be commonplace they cause an immeasurable amount of psychological, physical, and emotional trauma that lives on and tarnishes the lives of all involved. Gun violence occurrences in schools are frequent, increasing, and jeopardize the safety of all critical stakeholders and surrounding communities. Research has shown that approximately 58% of perpetrators of school violence were associated with the school and 70% of perpetrators are white males (Everytown, 2022). Also known is that there are

warning signs prior to an attack. The United States Department of Education and the Secret Service worked together to study school violence and found that in 93% of cases there were behavioral warning signs (Everytown 2022). Future studies have corroborated that 100% of perpetrators displayed at-risk behaviors. Additionally, according to Everytown (2023), 95% of American public schools between 2015-2016 drilled students on lockdown procedures and 77% of the time peers were aware of a plan to carry out an act of violence (Everytown, 2023).

More than 292,000 students have experienced violence at school since the Columbine shooting (Cox, Rich, Chiu, Muyskens, & Ulmanu, 2022). In 2021, there was the highest number of firearm related incidence; 202 total in schools (Everytown 2021). In 2019, there were at least 130 firearm related incidents in schools (Everytown, 2019). In 2018, the highest number of school stakeholders were murdered including the shooter with 51 people killed; this included the Valentine's Day Massacre carried out by, Nikolas Cruz, which tragically claimed the lives of 17 high school students with their entire lives ahead of them. It is important to note that according to data, California, Texas, and Florida have been the states that have reported the greatest number of firearm related incidents in schools (Campus Safety, 2022).

Moreover, most school shootings take place in the parking lot (21.8%), as well as inside of classrooms (10.3%). Also known is that the majority of school shootings take place in the morning (18.4%) followed by a sporting event (10.2%) or afternoon classes (10.1%). Almost 700 incidents resulted from an unresolved dispute (Campus Safety, 2022). The predominant number of victims are male in comparison to female; 1,729 versus 515 respectively. Although school shootings can happen any day at any time, it has been reported that the most common time of year for a school shooting to occur is during the Fall (Campus Safety, 2022).

Furthermore, Campus Safety (2022) indicated that out of 887 school shooting incidents (43.1%) the perpetrator of violence attends the school, however, 409 shooters (19.9%) do not have any affiliation with the school. In 1,259 incidents related to gun violence at schools there was one perpetrator and the majority of school shooters are overwhelmingly male (Campus Safety, 2022). In regard to weapons being used to carry out these atrocities, the most commonly used weapons are handguns and rifles and the most common age of a school shooting perpetrator is 15-17 years of age (Campus Safety, 2022).

Causes of Increased Gun Violence in School

Gun violence in schools is a pervasive and complex issue that continues to escalate over time. There are multiple reasons as to why gun violence occurs in schools, as well as reasons as to why it has intensified to date. The COVID-19 pandemic has had an excruciating impact on stakeholders academically, vocationally, and perhaps most significantly socially and emotionally in regard to the ways in which mental health issues including depression and anxiety have been exacerbated. According to Brooks (2022), the stresses and challenges of the pandemic have caused an increase of gun violence in schools and those studying this trend feel it will continue to worsen over time.

According to Teach Democracy (2023), an increase in access to weapons via obtaining the weapon at home or through illegal sales has amplified. The increased purchase of guns and the inadequate storage of guns has led to an increase in gun violence in schools presently (Brooks, 2022). Many after school programs and teams that promoted collaboration and connectivity have still not fully been reimplemented in certain places causing further isolation and isolation leads to feelings of sadness, disengagement, lack of connectivity, anxiety, depression, loss, suicidal and homicidal ideations. The pandemic has highlighted the essential

role schools play in providing a haven and a protected place for students to thrive academically, vocationally, and socially emotionally.

Media violence is another cause of violence in schools, which has also intensified so children and teenagers are witnessing violence more frequently on television, in movies, and in video games. Further, enrollment sizes of schools can make it difficult to identify students who may be struggling due to the large number of students (Teach Democracy, 2023). It is imperative to have enough educators and helping professionals in schools to help provide necessary support to those students who are struggling. In addition, another cause of violence in schools is that there has been an increase in community violence and changes in family structure including divorce or grief and loss that has further led to less oversight and an increase in feelings associated with depression, anxiety, and isolation. To further intensify an already troubling issue is the fact that there is limited funding regarding teachers, social workers, psychologists, and school counselors who are integral in addressing and reducing violence in schools (Brooks, 2022). It is vital that every school has critical stakeholders who work collaboratively to ensure that their students are ready for their post-secondary endeavors academically, as well as to ensure that their students have the resources and support that they need to be well-adjusted individuals.

Moreover, another underlying factor that has led to an increase in school violence is parents' busy work schedules which may lead to a decrease in monitoring and has caused less consistent routines for kids. Less oversight and instability can have a negative impact on students' behavior, ability to focus, perform, and cope (Brooks, 2022). Additionally, parents tend to reinforce and reiterate the importance of positive behavior. If parents do not do this, children may develop negative behavior patterns (Teach Democracy, 2023). Parent involvement is critical for student success holistically. Having consistency, familiarity and structure is vital for the wellbeing of students mentally and physically. If there are challenges at home, this may make warning signs for stakeholders at school more challenging to identify.

Furthermore, research has shown that revenge is the leading cause of school violence and perpetrators of violence want to retaliate against those who they believe have hurt them (Alfred University, 2022). The second leading cause of school violence is relentless bullying. Many perpetrators of gun violence in schools have shown a lack of value for life, have witnessed abuse, may struggle with an underlying and or untreated mental health disorder, have access to firearms, engage in delinquent activities such as substance usage, witness violence in media, or lack a strong familial and peer support system (Alfred University, 2022).

According to Stopbullying. gov (2021), social emotional learning has shown to help others develop social skills, awareness, and improve their academic and relational success, thereby helping to decrease bullying and promote positive behaviors. Studies including Nickerson, A., Fredrick, S., Allen, K, and Jenkins, L., '*Social emotional learning practices in schools: Effects on perceptions of bullying victimization'* and Durlak, J. Oberle, E., Taylor, R. and Weissberg, R., '*Promoting positive youth development through school based social and emotional learning interventions: A meta-analysis of follow up effects,*' have shown that SEL skills help to reduce the risk for someone to bully others, as well as help to shield students from being bullied via teaching empathy, effective problem solving, self-management, and healthy decision making (stopbullying.gov, 2021).

Definition of Social Emotional Learning (SEL)

According to the Collaborative for Academic, Social, and Emotional Learning CASEL (2023) SEL is defined as the process by which people obtain and apply the knowledge, skills,

and attitudes needed to develop healthy self-concepts and identities, to set and achieve positive strength based goals, manage emotions in a healthy way, to develop compassion, understanding, and empathy for others, to build healthy and fulfilling relationships, and to make healthy and informed choices.

SEL Core Competencies

There are 5 SEL core competencies, which will be addressed in greater detail.

Self-Awareness

Ability to understand our emotions, thoughts, and values and how they impact our behaviors, as well as our ability to identify our strengths and areas that necessitate growth in regard to identifying personal and social identities, emotions, demonstrating integrity, and possessing a growth mindset (CASEL, 2023).

Self-Management

Ability to regulate emotions, thoughts, and behaviors in various situations and to work intentionally to set and achieve strength-based goals including using stress management strategies, setting goals, and taking initiative (CASEL, 2023).

Social Awareness

Ability to understand and be receptive to the viewpoints of others, empathizing with others, and recognizing ideologies from diverse cultures and perspectives including recognizing others' strengths, showing concerns and empathy, and demonstrating gratitude (CASEL, 2023).

Relationship Skills

Ability to build and maintain healthy and fulfilling relationships and to work collaboratively with diverse populations regarding problem solving, communicating, listening, and demonstrating leadership abilities including communicating effectively, having positive relationships, being culturally responsive, possessing healthy conflict resolution skills, and assertiveness (CASEL, 2023).

Responsible Decision Making

Ability to make thoughtful and informed choices about personal behaviors and social interactions in various situations including demonstrating open-mindedness, identifying solutions, utilizing critical thinking, and engaging in reflective practice, as there is always room for growth (CASEL, 2023).

Role of SEL in Reducing School Violence

SEL plays a significant role in mitigating school violence. Data have consistently shown that SEL leads to improved academic outcomes, benefits social building skills and promotes celebration if diversity, helps to prepare students for post-secondary endeavors so that they feel confident, competent, and ready to pursue lucrative and satisfying careers, and well as have shown to augment lifetime outcomes (CASEL, 2023). Additionally, a meta-analysis that assessed 213 studies involving more than 270,000 students found that those who participated in SEL related interventions that addressed the 5 core competencies had better outcomes regarding increased performance, improved behavior, and more positive attitudes (CASEL, 2023). Thus,

students who possess SEL skills, are more likely to excel in school, formulate healthy relationships, have better mental health, feel more engaged, demonstrate more empathy, are more motivated and optimistic, are better able to resolve conflict peacefully, and have healthier coping skills, therefore are less likely to act out in an aggressive or volatile manner.

Benefits of SEL

The findings showed that there are a myriad of benefits and advantages for implementing SEL into comprehensive counseling curricula regarding its impact on creating safe and inclusive school climates. SEL interventions enhance students' social and emotional skills, as well as reduce symptoms of depression and anxiety (CASEL, 2023). Additionally, SEL has been shown to augment healthy relationship building, helps to create safe school climates, as well as helps to enhance critical skills such as time and stress management, motivation, and optimism, which all promote mental health and overall wellness (CASEL, 2023). SEL has been shown to increase levels of resilience, which is instrumental for overcoming adversity and enhancing feelings of empowerment, which is critical for overall success. Additionally, SEL has shown to reduce bullying and aggression (CASEL, 2023), as SEL teaches empathy, compassion, and perspective sharing. This finding is pivotal, as bullying is one of the leading causes of school violence.

Furthermore, SEL has also shown to be effective across demographic, socioeconomic, and cultural backgrounds within urban, suburban, and rural communities nationally (CASEL, 2023), which further demonstrates that regardless of one’s background, SEL is impactful for teaching the universal life skills students need to be successful during school, as well as in the workforce. SEL has shown to support the growth and evolution of students from all different backgrounds and recognizes the importance of acknowledging and celebrating diversity (CASEL, 2023); also integral for creating safe and inclusive school climates. Research has shown the SEL interventions incorporating the five core competencies had higher academic performances; by 11 percentile points in comparison to those who did not participate (CASEL, 2023). In regard to financial investments, according to an analysis of six evidence-based programs, the findings show that the advantages of SEL far outweigh the costs, in that for every dollar invested there is an $11 return (CASEL, 2023). This further supports its efficacy in helping students to be more prepared for challenging and higher paying jobs upon graduation, as well as helping to improve self-efficacy and self-worth, which are vital components for mitigating school violence and for cultivating safe, happy, and healthy school climates.

School Counselors and SEL

School counselors are strongly encouraged to integrate SEL into their comprehensive counseling curricula in order to create cohesive and safe school environments, as well as to ensure that students are prepared for their post-secondary endeavors. At the elementary level, school counselors can implement character education programs such as Character Counts, which addresses moral character (trustworthiness, respect, responsibility, and caring), performance character (discipline, organization, confidence), intellectual character (critical thinking, problem solving, and open-mindedness), and civic character (leadership, teamwork, and civility) (Character Counts, 2023). School counselors at the elementary level can also implement an SEL program such as Leader in Me, which is an evidence-based comprehensive program that addresses leadership skills, helps to create a strong and trusting school culture, and provides a strong foundation for academic success (Leader in Me, 2023). The Leader in Me Program addresses a variety of SEL skills such as leadership, autonomy, resilience, motivation, conflict

resolution, coping skill building, communication, as well as a plethora of additional skills and practices. The Leader in Me Program focuses on 5 core paradigms in order to foster growth and empowerment including everyone can be a leader, everyone has genius, change starts with me, educators empower students to lead their own learning, and developing the whole person (Leader in Me, 2023).

At the secondary level, schools can integrate the Safety Assessment & Intervention, which is an evidence-based program used to address volatile behaviors prior to them turning violent. The Safety Assessment & Intervention Program is one of Sandy Hook Promise's Know the Signs programs (Ohio Department of Education, 2021). The Safety Assessment & Intervention program provides multi-disciplinary school stakeholders ways to identify threats, signs, and behaviors leading to a volatile act, determining the severity of the threat, and creating intervention plans that safeguard potential victims and address the underlying issue that caused the behavior (Sandy Hook Promise, 2021). This allows for a response to threats of violence before they actually take place; allowing stakeholders to be proactive rather than reactive. In addition, another program titled, 'Know the Signs' is an evidence-based program via Sandy Hook Promise that teaches critical stakeholders ways to prevent school violence, shootings, and other dire and volatile acts. Within this program, stakeholders learn ways to identify students who are at-risk for carrying out acts of violence, as well as become aware of prevention measures to keep all stakeholders protected (Sandy Hook Promise, 2021). Sandy Hook Promise programs integrate the 5 SEL competencies including self-awareness, self-management, social awareness, relationship building, and decision-making skills. Trainings and resources are free and all training materials including lesson plans, activities, discussion guides) are available at https://www.sandyhookpromise.org/our-programs/program-overview/online-virtual-learning-for-bullying-violence-and-suicide-prevention/ (Sandy Hook Promise, 2021).

In addition to implementing interventions geared toward reducing gun violence in schools, school counselors are also encouraged to facilitate responsive services to create safe and caring school climates. School counselors can conduct individual, small group, and classroom counseling addressing SEL topics such as time and stress management, anger management, coping skills, social skill building, communication, diversity, optimism, conflict resolution, emotion regulation, decision making, motivation, empathy, and resilience in order to raise awareness of these vital intrapersonal and interpersonal skills that are instrumental to the academic, social / emotional, and career success of all students.

Ultimately, it is critical for school counselors to integrate SEL into their curricula, as SEL has shown to play a monumental role in creating safe, inclusive, engaging, and interactive school climates. Students who possess SEL skills are better able to regulate their emotions, manage time and stress, cope with challenges, communicate their feelings effectively, identify healthier ways to problem solve, work collaboratively with others, solve problems peacefully, feel better about themselves and have higher self-worth, are more motivated and optimistic, engage in goal setting, build upon strengths, demonstrate gratitude, take accountability, recognize areas for growth, and want to see themselves and their peers succeed thereby being less likely to engage in bullying, violence, or other volatile self-destructive behaviors.

Best Practices: Reducing Gun Violence

One of the most important aspects of reducing gun violence in schools is to determine and identify best practices that have shown to elicit positive outcomes. Gun violence in schools has a deleterious impact on students holistically and as a society we must work collaboratively to

implement strategies that will eradicate gun violence in schools and that will keep our critical stakeholders protected and safe from harm.

According to Everytown (2022), school safety plans need to enact a meaningful gun violence prevention plan that implements interventions before a perpetrator carries out an act of violence. We must be proactive rather than reactive. Below, best practices to reduce gun violence in schools will be addressed. Several best practices that can be implemented externally include Extreme Risk Laws, Firearm Storage Laws, Raising Minimum Age to Purchase Firearms, as well as having Background Checks on All Gun Sales. These will be described in more detail below.

External Best Practices

There are several external best practices that can be implemented, which will be addressed in greater detail.

Extreme Risk Laws

As previously stated, most shootings are premeditated and logistically planned. For example, in regard to the Valentine's Day Massacre at Marjory Stoneman Douglas High School in Parkland, Florida almost 30 people knew of a potential attack prior to it happening. Tragically, the perpetrator was able to purchase a gun legally, as he was never convicted of a crime and his mental health history did not impede upon his ability to purchase a gun (Everytown, 2022). Extreme Risk Laws are laws that law enforcement, family members, and educators can share with the court to prevent an at-risk person from accessing or purchasing a gun. If a critical stakeholder is made aware that an at-risk student plans to purchase a gun, that person can file a civil restraining order with the court to prevent this from happening. These protection orders can only be used after a determination has been made that a person is at risk to themselves or others. There is also a due process component to ensure that a person's innate rights are weighed against public safety (Everytown, 2022). If an order is issued, a person is mandated to give up any firearms they may have and this prohibition period typically lasts 1 year. Since many perpetrators display warning signs, using Extreme Risk Laws can be advantageous in preventing these students from purchasing and accessing a firearm. The following states enforce Extreme Risk Laws: Washington, Oregon, California, Nevada, Colorado, New Mexico, Florida, Illinois, Indiana, Virginia, Delaware, New Jersey, Maryland, New York, Connecticut, Massachusetts, and Vermont (Everytown, 2021). Due to their impact, it would be advantageous for all states to implement these laws to safeguard the most vulnerable and to protect at-risk students from inflicting harm on themselves and others.

Firearm Storage Laws

Storage laws mandate that people lock and store their firearms safely in order to prevent minors or those unsupervised to have access (Everytown, 2022). Child Access Prevention Laws focus on preventing minors from having access to firearms (Everytown, 2021). Since most school shooters are between 15-17 years of age, parents and family members are implored to store their firearms securely in order to safeguard the wellbeing of their children and others at large.

Raise Minimum Age to Purchase Semi-Automatic Weapons

Raising the minimum age to 21 to purchase a firearm will prevent a teenager from legally

purchasing a gun. Research has demonstrated that 18- to 20-year-olds are four times more likely to commit firearm atrocities in comparison to those 21 and older (Everytown, 2022). Therefore, increasing the minimum age in order to purchase firearms will help mitigate the number of teenagers who can purchase a gun, thereby reducing the number of gun violence tragedies at schools.

Background Checks on All Gun Sales

Mandating a comprehensive background check on the sales of all guns (Everytown, 2022) can help to prevent people who have a criminal record, history of mental health issues, or those who should not have access to guns from purchasing a firearm, which will further reduce gun violence incidents in K-12 school settings.

Internal Best Practices

Additionally, there are internal best practices that can be implemented in order to create safe and inclusive school climates including School Based Interventions, Creating Safe School Climates, Conducting Threat Assessments, Screening, Referrals, and Counseling, Security Upgrades, Breaking Down Codes of Silence, and Integrating SEL into Curricula. These will be discussed in more detail below.

School Based Interventions

Additionally, there are several school-based interventions that can be implemented in order to create safe school climates. According to Everytown (2022), one way to create safe schools is to support them to become community schools, which is the heart of the community. Community schools collaborate with local partners in order to improve the overall community at large. Community schools can provide additional educational opportunities for students, provide counseling for families, or offer mentoring (Everytown, 2022). Creating positive school climates that are affirming and focus on enhancing trusting relationships are key to students' success (Everytown, 2023).

Moreover, administrators and key stakeholders can advocate for implementing gun violence prevention programs that help to reduce the presence of firearms in schools. Sandy Hook Promise has several K-12 programs that can be implemented in order to create a safe school climate. Start with Hello is a K-12 program that teaches children and teens ways to mitigate social isolation, to enhance empathy for others, as well as to create inclusive school climates (Sandy Hook Promise, 2021). The Say Something Program for grades 4-12 helps to train students to identify warning signs and threats posted on social media if someone threatens to hurt themselves or others and ways to share this information with an adult prior to a crisis occurring (Sandy Hook Promise, 2021). The Say Something Anonymous Reporting System is geared to grades 6-12 and stems from the Say Something Program that teaches students how to use an electronic anonymous reporting system using a downloaded app, hotline, or website that students can utilize in order to report an issue or if they see a peer who is at-risk of harming themselves or other students. Training for critical stakeholders and law enforcement is mandated (Sandy Hook Promise, 2021). The SAVE (Students Against Violence Everywhere) Program motivates students to create a safe school climate by modeling and reiterating the themes of the Say Hello and Say Something Programs. SAVE Promise Clubs receive resources to help plan events and activities school wide that work to foster kindness, empathy, compassion, and protection (Sandy Hook Promise, 2021).

Additionally, the Safety Assessment and Intervention Program is a national evidence-based program developed by Dr. Dewey G. Cornell. This program works to train schools on using threat assessments to determine the degree to which a student poses a threat to self-and others. The program focuses on identifying threats and warning signs of violence, determining the seriousness of the threat, and developing intervention plans to protect stakeholders, as well as to determine the deeper-rooted issue that led to the behavior (Sandy Hook Promise, 2021).

Furthermore, **bullying** and **retaliation** are the leading causes of gun violence in schools. It is vital for K-12 schools to implement anti-bullying programs to create safer and more inclusive school settings. Anti-bullying programs address the meaning of bullying, long and short-term consequences of bullying, the importance of acceptance, compassion, and empathy, as well as best practices to reduce bullying. It is paramount for students to understand the significance to be upstanders rather than bystanders and to help stand up for their peers who are being attacked. Additionally, it is important to teach students assertiveness skills and the use of I-Messages in order to help them communicate, advocate, and take a stance against bullying and promote feelings of empowerment. Several evidence based anti-bullying programs include Steps to Respect (CDC Promising Practices, 2023) or the Olweus Bullying Program (Clemson University, 2023). Each of these anti-bullying programs emphasize the importance for students to treat one another with respect and dignity to create a safe and engaging school climate. These programs focus on improving peer relations and creating a more accepting school climate.

Please see additional resources on other anti-bullying programs:
https://nationalgangcenter.ojp.gov/spt/Programs/47
https://cdc.thehcn.net/promisepractice/index/view?pid=981
https://www.ocali.org/project/bullying_and_individuals_with_special_needs/page/anti_bullying_program_resources
https://dare.org/bullying-awareness-education-and-prevention/
https://www.positiveaction.net/bullying-prevention-curriculum-programs

Creating Safe School Climates

Stakeholders must work intentionally to create environments that are engaging, safe, and foster connectivity, security, acceptance, and cohesion for all. Research has shown that students thrive academically, behaviorally, and socially/emotionally when school climates are safe, uplifting, student centered, strength-based and close knit. Stakeholders are strongly encouraged to build strong and positive rapport with students (Everytown, 2021), as this has the greatest impact on student growth. It is pivotal to provide support and a non-judgmental, caring, and open environment for students to self-disclosure and share. Having visibility, listening and validating students, having an open-door policy, boosting morale, supporting students and their families are critical components of having safe and engaging school climates that facilitate knowledge, empowerment, and protection for all.

Additionally, it is imperative for schools to begin using Artificial Intelligence (AI) and technology and collaborating with outside agencies in order to develop a centralized platform for threats to be directed to. This will allow law enforcement and officials to be notified immediately of a threat in order to determine if a threat is credible. Additionally, schools can utilize AI gun detection in which software can be installed on surveillance cameras throughout the school in order to identify potential weapons and firearms (Sulzer, 2022). If a gun is located via AI

surveillance cameras, then there is an alert sent to law enforcement and school administrators. AI gun detection is a more modern technology than metal detectors and is being used more frequently in security systems within schools. It can be installed using existing surveillance cameras using a remote installation process (Sulzer, 2022). AI is faster and more accurate than metal detectors and administrators or security officers do not have to spend as much time manually screening students. Moreover, using AI surveillance has a non-threatening appearance, which can help to promote a more uplifting, inclusive, and peaceful school climate.

Crisis Response Teams and Conducting Threat Assessments

Crisis Response Teams are vital for mitigating violence, as this provides students and faculty with an opportunity to report any concerns they may have (Brooks, 2022). Crisis Response Teams provide support regarding prevention, intervention, and guidance to faculty and students during and after a traumatic event, as well as provide training regarding school safety and crisis response (Schonfeld & Newgass, 2003).

Moreover, conducting threat assessments are critical for identifying at-risk students, as well as determining the risk that these students pose to themselves or others in regard to potential for carrying out acts of violence. Everytown (2022) indicated that 100% of mass school shooters were current or former students. According to Everytown (2022), the most important thing that schools can do to prevent active school shooter incidents is to take preventative measures and intervene before a person commits a volatile act. Threat assessments and identification programs enable schools to intervene to address violent behavior (Everytown, 2022).

In addition, schools can create school-based threat assessment programs known as crisis response teams. These programs take a collaborative approach in which stakeholders can share concerns that they may have about a particular student and take a multidisciplinary approach if a student is in crisis (Everytown, 2021). Crisis teams may receive information about a threat, assess this threat, and develop interventions to prevent violence from occurring. According to the Department of Homeland Security early detection of violence is more impactful than a physical security measure (Everytown, 2022). Threat assessments need to identify students at risk of harming themselves or others, address student access to guns, as well as invest in school mental health services to ensure that at-risk students receive the help and support that they need to thrive. In order to effectively reduce gun violence in schools we must have trained stakeholders who are mindful of warning signs, as well as possess the ability to identify at-risk students and assist those students who are struggling prior to violence potentially occurring.

According to the Department of Education and the United States Secret Service (2003) there are eleven key questions that can be asked when conducting a threat assessment to determine the degree to which a student has the potential to carry out acts of violence. Some of the questions include:

- What are the student's motives and goals?
- Has the student shown an appropriate interest in weapons / violence?
- Are other people concerned about the student's potential for violence?
- Have there been any communications suggesting intent to attack?
- Is the student experiencing hopelessness, desperation, sadness?

https://health.esc2.net/sites/Health/files/u134/Eleven-Questions-to-Guide-Data-Collection-in-a-Threat-Assessment-Inquiry.pdf

Trauma Informed Crisis Intervention Practices

As previously noted, the most important thing that schools can do to prevent active shooters is to identify and intervene before a violent act is carried out. Identifying students who are struggling and providing behavioral and mental health support is vital (Everytown, 2022). Creating trauma informed crisis interventions that utilize a multidisciplinary team when there is a student in crisis can be helpful. These teams may obtain information about an identified student, assess the situation, and develop interventions to prevent violence while providing resources and support. Creating a trusting and safe school climate is key so students can come forward and share if another is in crisis. Additionally, schools must communicate to law enforcement if there are any threats so that they can investigate immediately (Everytown, 2022). These types of crisis intervention practices give stakeholders an opportunity to share concern and give students in crisis the support that they need (Everytown, 2022). Crisis intervention programs enable a school to take a collaborative approach in addressing crises in an efficient and proactive way.

Screenings, Referrals, and Counseling

Although school counselors cannot diagnose students with mental health disorders they can conduct mental health screenings to determine the degree to which a student may be struggling. For instance, school counselors can utilize the PHQ-9 https://www.apa.org/depression-guideline/patient-health-questionnaire.pdf to assess and screen students for Depression, as well as the GAD-7 https://adaa.org/sites/default/files/GAD-7_Anxiety-updated_0.pdf to assess and screen students for Anxiety. As advocates, leaders, and systemic change agents, school counselors must provide additional resources and referrals for students struggling with mental health disorders so that the students and their families have information that they need in order to obtain the help, guidance, and additional support outside of the school setting. School counselors must provide referrals to students who are struggling with deeper rooted mental health issues so that they can obtain the resources that they need to be successful. School counselors are strongly encouraged to collaborate with family members and outside mental health counselors to ensure that students are receiving the proper care and support that they need to live healthier lives. Additionally, school counselors in conjunction with outside clinicians can provide responsive services including individual, small group, and classroom counseling for students addressing an array of mental health topics, self-esteem, emotion regulation, bullying, decision making, coping skills, grief and loss, leadership, and empowerment. School counselors can implement best practices into their services in order to teach students impactful ways to address challenges they are struggling with.

Security Upgrades: Interior Door Locks and Access Controls

Schools can implement additional security measures such as enhancing access controls and having single access points, fencing, or additional locks to further prevent access from entering into schools (Everytown, 2020). Additionally, schools can have interior door locks installed, as these allow stakeholders to seal off classrooms without subjecting themselves to volatility by going outside of the classroom potentially into the direct line of fire (Everytown, 2022).

Active Shooter Drills

Although active shooter drills are used in many schools to prepare stakeholders for a potential crisis, they do have the ability to cause harm and trauma to stakeholders due to simulation tactics, staying quiet, and locking a door for a longer period. Some schools involve

parents and notify them of these types of exercises, while others do not and may simulate gun fire and other potentially traumatizing policies. Additionally, according to Everytown (2022), active shooter drills are also ineffective, since the preparedness procedures are being disseminated to those who may carry out the attack. Training for teachers and staff is vital, however, this type of training for students is not recommended (Everytown, 2022). Schools should create age-appropriate drill content and involve mental health professionals if drills are conducted, should not include actual simulations, parents should be informed, and drills should be announced prior to the start so all stakeholders are aware (Everytown, 2022).

Breaking Down Codes of Silence

In regard to breaking down codes of silence, creating a safe space for students to share information that they may be knowledgeable about a potential threat is paramount so that this information can be disseminated and shared prior to an attack being carried out. Creating a safe space and having a positive and trusting rapport with students is vital so that they feel comfortable and protected sharing information without having the fear of being retaliated against. In order for students to share information immediately and confidentially, counselors can create a Concern Form using Google Forms. Students or stakeholders can complete this form and provide details about the information that they possess and submit the form either knowingly or anonymously. School counselors can also create a Worry Box and students can write down their concerns and place them in the box for school counselors to review and follow up on. It is critical that school counselors create methods for students to report concerns so that they have an immediate and secure way to do so in order to amplify the protection of themselves and others.

Monitoring Social Media

Approximately 95% of teens have access to a smartphone. According to the National Center for School Safety (2022), the most popular social media sites include YouTube, TikTok, Instagram, Snapchat, Facebook, and Twitter. Many students today communicate predominantly via social media rather than face to face. Several perpetrators of violence have posted on social media prior to carrying out an attack. Therefore, monitoring social media is key. Parents and family members are encouraged to monitor messages their children are posting and receiving. Additionally, according to the National Center for School Safety (2022), there are social media monitoring programs that include real time monitoring, notifications, and keyword searches in order to flag concerning posts and send reports to school officials and officers to notify them of alarming information. Since perpetrators may post threats or intentions to carry out acts of violence via social media, the social media companies themselves must engage in due diligence and be more intentional in tracking posts that are threatening in nature and notifying authorities in order to alert them of potential danger. Monitoring social media is an essential component in reducing school violence and more steps need to be taken to reiterate the importance for students, parents, families, and social media companies to follow the mantra: see something, say something.

Integrating SEL into Curricula

Integrating SEL into curricula is vital, as SEL has shown to promote academic, social / emotional and behavioral success amongst students, as well as helps to amplify college and career readiness. School counselors can implement SEL school wide or in responsive services including individual counseling, small group counseling, classroom counseling, or crisis

counseling in order to teach students effective ways to de-escalate their emotions, to more effectively cope, address the importance of conflict resolution, as well as emphasize the significance of developing life skills including stress management skills, communication skills, emotion regulation skills, assertiveness, accountability, and empowerment skills, ways to enhance motivation and gratitude, the importance of goal setting, optimism, leadership, collaboration, and resilience in order to overcome adversity and struggles in peaceful and constructive ways. As bullying and retaliation are the leading causes of school violence, teaching perspective sharing and compassion are critical for helping to enhance flexibility, acceptance, celebrating similarities and differences, adaptability, receptiveness, and openness to feedback. Teaching empathy is critical so that students can put themselves in another person's shoes and allows them to understand the emotions that person is experiencing, as well as how they would feel if they were in that untenable situation. Empathy promotes understanding, fosters validation, and amplifies feelings of belonging and unity.

Discussion

School shootings have an immeasurable impact on students academically, behaviorally, socially, emotionally, and psychologically. This manuscript highlights the instrumental role school counselors and other critical stakeholders play in mitigating gun violence via creating a safe, inclusive, optimistic, engaging, interactive, experiential, rigorous, and culturally responsive school climate that enables all students to feel heard, included, and experience a sense of belonging. School counselors can work tenaciously to further mitigate gun violence by implementing school wide prevention programs including the ones addressed in this manuscript, classroom counseling, small group, and individual counseling sessions addressing bullying and other SEL skills such as stress management, communication, diversity, communication, collaboration, conflict resolution, emotion regulation, empowerment, motivation, and compassion.

Best practices including encouraging families to augment the safety and storage of firearms, amplifying safety measures in schools, hiring more helping professionals such as school counselors and mental health counselors to assist and support at-risk students, conducting mental health screenings to identify students who may be struggling with underlying mental health issues, monitoring social media to assess for potential threats or disconcerting behavior, working collaboratively with critical stakeholders and local law enforcement in order to take preventative measures to keep all stakeholders safe and abreast of potential threats, facilitating threat assessments to determine the risk potential students may pose to themselves or others, breaking down codes of silence to ensure all students are given a platform to convey concerns safely are all proven and effective strategies that can be used to prevent violence and help augment the safety and security of all students and critical stakeholders at large.

Conclusion

Tragically, school shootings have increased for a variety of reasons including the COVID-19 pandemic, an increase in mental health disorders, a decrease in the number of stakeholders who are able to identify and support at-risk students, school closures, isolation, depression and anxiety, loss of hope, anger, sadness, grief and loss, access to firearms, reduced oversight, increased use of social media, lack of peer support and connection, all which result in students who are struggling academically, vocationally, socially emotionally, and psychologically. Although there is not a definitive answer to this deeply rooted systemic and

societal issue, there are steps that school stakeholders can take to work and strategies that can be implemented in order to create safe and inclusive school climates that provide assistance, interventions, resources, support, and hope for all. Integrating SEL into curricula via school wide interventions, as well as in responsive services is paramount for school and workplace success, as SEL provides students with life skills needed to be successful in school and in the workforce including collaboration, diversity, communication, zest, optimism, conflict resolution, emotion regulation, coping skills, listening, assertiveness skills, accountability, and empathy.

Additionally, prevention measures are key to be proactive rather than reactive in mitigating gun violence in schools. Stakeholders must engage in early identification, provide assistance, and resources to at-risk students who may be struggling. Facilitating mental health screenings in order to identify students who may be struggling with an underlying mental health issue, conducting threat assessments to determine the degree to which a student poses a risk to themselves or others, breaking down codes of silence to allow students a secure and confidential way to communicate concerns they may have, and monitoring and reporting social media posts is vital in order to assess messages that imply that a threat of violence is imminent. It truly does take a village to collaborate, consult, support, provide outreach and interventions, and to work intentionally day in and day out to make sure all students feel safe, included, celebrated, heard, validated, accepted, and loved. These are many of the necessary ingredients to creating safer and more protected schools, as well as stronger, healthier, more successful, more engaged, more connected, more well-adjusted, and more resilient students.

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Digital Simulations in Education: Insights from Two Studies Using the Teacher Moments Platform

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Abstract

This paper examines the use of Teacher Moments, a digital simulation platform, in two research studies exploring cultural humility in online teaching and factors perceived to influence decision-making in asynchronous courses. The authors discuss the strengths and limitations of Teacher Moments as a research tool, highlighting its potential for creating immersive scenarios and collecting data. While the platform offers benefits such as access to existing simulations and collects and organizes data, it also presents challenges with some of its features and functionality. The authors recommend Teacher Moments primarily for classroom assignments and teacher education rather than research, emphasizing its value in bridging theory and practice, fostering self-reflection, and developing essential skills in low-risk environments.

Keywords: scenarios, vignettes, simulations, teacher education, Teacher Moments

Introduction

Teacher Moments is a digital simulation platform that allows you to create and share scenarios (MIT, 2024). This paper discusses the use of Teacher Moments in two research studies and describes the strengths and limitations that the researchers encountered while using the platform. The authors also provide recommendations for potential users.

Literature Review

Simulations in teacher education

Teacher Moments is an open-source platform developed by the Massachusetts Institute of Technology (MIT) Teaching Systems Lab. Their webpage promotes the preparation of teachers "for challenging situations through digital simulations" and can be accessed at https://teachermoments.mit.edu/. This paper analyzes the Teacher Moments platform as a data collection tool through two separate research studies that (1) examined online faculty's use of cultural humility (Sharma and Clark, 2021) in their interactions with students and (2) explored faculty's perceptions of factors they believed to influence dynamic decision-making when choosing opportunities for student engagement in online asynchronous courses in higher education. As Preston (2024) states, "Without proper engagement strategies, virtual learning can become nothing more than an independent study course as students work in silos and fail to connect with one another" (p. 4).

Vignettes are frequently used in the social sciences to gauge perceptions and beliefs (Finch, 1987; Murphy et al., 2021; Sampson & Johannessen, 2020). Teacher Moments served as the data collection tool for these studies because it provides a simulation-based authoring platform that allows users to develop vignettes for a variety of purposes. Scenario-based approaches allow researchers to develop hypothetical or real-world contexts that explore an individual's reasoning and decision-making (Sabatini et al., 2018). They serve as a framework for analysis and speak to the internal thinking of participants (Sabatini et al., 2018).

Although not incorporated into these particular studies, Teacher Moments also provides options for incorporating images and videos beyond typed text. Researchers can incorporate verbal and/or typed responses into the simulations. Verbal responses are automatically transcribed, and the recorded audio is available for playback. A data dashboard also collects and organizes participant responses (verbal transcription and typed text), allowing the researcher to download the data as a .csv file to analyze the results further. When the simulation is ready to be deployed, Teacher Moments generates a link to share with participants and provides a convenient, flexible, and accessible method to conduct research.

According to Levin and Flavian (2022), "Simulations were developed as a training tool to efficiently practice and cope with complex and challenging situations that professionals encounter on a daily basis in their field" (p. 374). Exposure to simulation-based learning methods benefits preservice teachers, for example, by helping them conceptualize and apply the learning from the simulation to similar real-world scenarios (Levin & Flavian, 2022). Simulations also provide a safe, low-risk learning environment and contribute to the development of various aspects of teacher education (Levin & Flavian, 2022). Dittrich et al. (2022) found that simulations have transformative potential for bridging the gap between theory and practice.

Throughout the two studies discussed in this article, the Teacher Moments platform demonstrated strengths and limitations to the researchers that future users should consider. The authors will describe their experiences using Teacher Moments as a research tool and share recommendations for using it for other purposes in teacher education.

Our Experiences with Teacher Moments

Study 1: Cultural Humility in Online Teaching

Great teachers know that teaching can happen anytime and continually seek opportunities to support students. After a faculty meeting where Allison and Odunola discussed research projects, we considered using scenarios to examine online faculty's use of cultural humility (Sharma and Clark, 2021) in their student interactions. Since online teaching is less likely to be examined immediately, online teaching scenarios can be used to explore teachers' in-the-moment decisions more closely as they interact with students in online learning settings. We created online teaching scenarios that would engage teachers in examining how they would respond to students in different common online teaching and learning situations. Cultural humility is the lifelong process of equalizing the power dynamics in situations such as teaching by critically reflecting on interactions and self, recognizing and challenging power dynamics to create respectful relationships, and maintaining institutional accountability (Moncho, 2013).

Teacher Moments was used to research how online faculty show cultural humility when interacting with students during distress, uncertainty, and confusion. We worked with Teacher Moments to provide participants with high-stakes scenarios in low-stakes environments to assess how they would respond to student concerns. The scenarios were crafted using our understanding of cultural humility and our experiences with students in online classes. One vignette representing cultural awareness asked instructors to re-assess and reflect on their icebreaker activity to accommodate a student who does not feel comfortable sharing personal information with their classmates. Another scenario representing sensitivity to student concerns asked instructors to respond to students who were not feeling connected to their classmates and wondered if they belonged in the program.

In Teacher Moments, students make real-time decisions based on faculty-developed, real-life, challenging classroom situations. Faculty can provide feedback through audio or

written responses to delve deeper into the thought process and make thinking visible and, if chosen, audible. In our case, this approach helped participants gain a deeper understanding of the complexities of teaching through reflection. It also allowed participants to respond to realistic scenarios in their day-to-day online teaching practices, providing them with a safe environment to practice handling difficult conversations and assessing their cultural humility.

Study 2: Perceptions of Factors That Influence Decision-Making in Online Courses

In the second study, Leticia utilized Teacher Moments to explore how instructors at a mid-sized university in Arkansas perceived factors to prevent and facilitate dynamic decision-making when designing instructor presence, student-to-student collaboration, and student-to-academic content engagement as Garrison et al. (1999) suggest for a community of inquiry. The study employed a case study approach and consisted of twelve participants serving as a single bounded case. The research questions were (1) What factors do higher education faculty perceive to influence dynamic decision-making when choosing opportunities for student engagement in asynchronous online courses, and (2) How do faculty in higher education perceive these factors to prevent and facilitate dynamic decision-making when choosing opportunities for student engagement in asynchronous online courses (de la Garza, 2023)?

The simulated vignettes for this study were contextualized around the three types of presences in the Community of Inquiry framework: teaching presence, social presence, and cognitive presence (Garrison et al., 1999). In the vignettes, two fictitious asynchronous online instructors, Dr. A and Dr. B, were used to contrast differing degrees of dynamic decision-making. Throughout a series of three vignettes, participants were asked two questions that explored factors they perceived to prevent or facilitate Dr. A and Dr. B's decision-making regarding student engagement in a fictionalized asynchronous online course. A reflexive thematic analysis (Braun and Clarke, 2022) was conducted, and themes centered around organizational norms and policies and personal factors associated with asynchronous instructors were generated (de la Garza, 2023).

Throughout this study, Teacher Moments demonstrated strength as a platform for designing vignettes and exploring participants' perceptions, beliefs, and values; however, it presented significant limitations that researchers should consider before committing to its use as a data collection tool.

Strengths & Limitations of Teacher Moments as a Research Tool

Strengths

Communication

When support was needed, the Teacher Moments staff promptly responded to the researcher's needs. Community of Practice sessions were also offered virtually every month. Anyone using Teacher Moments could ask questions and troubleshoot issues with meeting facilitators. Because the sessions were virtual, individuals from all over the world could participate and contribute to how they were using the Teacher Moments platform, further adding to its potential.

Existing Simulations

For those new to Teacher Moments, a wide array of simulations are available for those interested to review. Additionally, these simulations are adaptable. Users may copy them and adapt them to suit their own needs.

Access

Once a simulation was completed, a link to the simulation was generated. This link could be distributed to participants via researcher-chosen electronic methods. In these studies, participants received the link to the Teacher Moments simulation via email.

Informed Consent

For researchers wanting to save their participants from additional paperwork, Teacher Moments allows for the authoring of informed consent within the development of the simulation. Researchers can draft the informed consent and add it as one of the slides participants will see. Participants can click a button that grants or declines consent.

Data Collection and Organization

Teacher Moments provides a data dashboard. Once the researcher identifies a specific group of participants, they can create a cohort and assign them a simulation. Once the simulation is completed, the researcher will be able to review the collected responses in an organized spreadsheet-like view. The participant responses are organized into rows and columns, and they are also downloadable as a .csv file that can be further analyzed.

Limitations

Getting Started

Setting up a Teacher Moments account can be created online at https://teachermoments.mit.edu/; however, to obtain an account for *research* purposes, one must send an email and request authoring privileges. At the time that these studies were conducted, the email was teachermoments@mit.edu. It is not automatically provided when an account is created. There is also a learning curve to understand how Teacher Moments works. The simulations are slides-based, and time is required to learn the functionality of the platform and consideration will need to be made as to how the researcher wants to design the experience for participants.

Participant's Ease of Use

When conducting research, participants will likely need an explanation of how to login and navigate through Teacher Moments. In Leticia's study, some participants had trouble logging in using an iPhone, iPad, and incognito browser. Instructions with screenshots were provided to participants in the study, and most could access the simulation successfully; however, with a small study, every participant is critical, and trouble logging in from the onset risks losing the interest and commitment of the participant to complete the simulation.

Functionality and Data Collection

These studies were designed to allow participants options to record their voices or type their responses. In Leticia's study, participants had the option to state more than one factor they

believed influenced an asynchronous online instructor's decision-making. These research design choices, however, ran into some compatibility issues with the Teacher Moments platform. At the time of the study (2023), a yellow "Choose to Skip" button appeared by default in the vignette window when the researcher did not *require* audio or text input from the participant. (Once participants typed or recorded their voices, the yellow button would turn green to save their responses and allow them to move on to the next slide.) The appearance of the "Choose to Skip" button is an important thing that researchers should consider if they want to provide more than one way for participants to respond in the Teacher Moments platform and not force a particular type of response. From a research perspective, the "Choose to Skip" button risks a participant's accidental or intentional ability to skip a slide. If a participant can skip a question, the researcher may not collect the data they need for their study.

Another challenge in Leticia's research study was the inability for her to incorporate checkboxes for the participants to select more than one factor they believed to influence an online instructor's decision-making. This impacted the design of the slides and a bulleted list was instead provided for participants with a text box and voice recording option for them to explain and elaborate on their thoughts. The initial desire was that participants could check off more than one factor; however, because this was not possible, the way the questions were asked had to be reconsidered.

Finally, and most importantly in Leticia's study, it was discovered that long audio responses were not transcribed and long typed responses were truncated when the full data set was downloaded as a.csv file. Of the twelve participants, only one chose to audio record their responses. Part of the allure of utilizing Teacher Moments for this study was its ability to transcribe audio automatically. However, in this case, this participant had responses averaging about five minutes, and none of them were transcribed. The audio recording was saved, and playback was available; however, the researcher had to manually transcribe the participant's responses.

Additionally, when all participants had completed the simulation and Leticia was ready to download the full data set, it was noticed that some participants' responses weren't complete. She went into the individual-level spreadsheets and realized that the comprehensive data set spreadsheet cut off some participant responses. The original typed responses had been lengthy, stretched out the spreadsheet-sized cell, and were not fully transferred into the comprehensive data set spreadsheet. Leticia had to go to each individual participant's spreadsheet and copy/paste it into the comprehensive, full data set for analysis.

Recommendations for Teacher Education

Based on our experiences, we would not recommend using Teacher Moments for research. We recommend Teacher Moments for classroom assignments involving evaluation of teaching practices (i.e., classroom management, leadership development, decision-making at the administrative level, social-emotional development, counseling theory, reflection, etc.) (Thompson et al., 2019). Since Teacher Moments is a free tool with support that includes monthly video conferences with experts creating a community of practice, it can bring more simulations into your classroom (Nadelson et al., 2022; Thompson et al., 2019).

Potential Uses for Teacher Moments

Classroom Practice

Teacher moments can be helpful in the classroom as a way for teachers to connect education theory and practice in low-risk environments. College professors can use teacher moments to prepare novice teachers for conversations with parents. Education students can reflect on their part in these conversations individually, generate ideas for discussion, share their ideas, and gather feedback from classmates and the instructor (Dittrich et al., 2022).

Self-reflection

Teachers and students can use the Teacher Moments simulation after each lesson and write about what happened in a notebook or the notes section of their phones. The instructor can download the responses and send them to students for reflection. They could even send themselves a voice note, noting their reactions and feelings and those of the students (Frei-Landau & Levin, 2023).

Interview & Internship Preparation

Reflecting on scenarios and providing feedback are good tools for teaching interviewing skills. Learning appropriate probes and ways to respond to scenarios is valuable (Kensicki et al., 2022). Teacher Moments simulations can benefit students in internships by helping them develop skills essential in the workplace, such as adaptability, empathy, application of concepts, engagement, mastery, and practice (Kensicki et al., 2022).

Conclusion

Even though we would not recommend Teacher Moments as a research data collection tool, we do believe that Teacher Moments simulations provide excellent opportunities for teachers to think deeply about teaching practice. Based on our experience, participant responses reveal unique ways of interacting with students. The experiences are powerful teaching and learning aids that can improve teacher education and the preservice teacher's learning experience as they prepare to teach in classrooms with actual students.

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Preparing Secondary Teacher Candidates for Building Community in their Classrooms

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Abstract

One important aspect of successful classroom management is creating a positive classroom environment or community, the strategies for which can vary by grade level. Secondary teachers need community building strategies that meet the unique needs of secondary classrooms. Community builders are one strategy that have been successfully integrated into a secondary educator preparation program (EPP). This article explores the importance of building community in secondary classrooms in order to promote social and emotional learning as students' mental health needs are increasing. Content focuses on how community builders are beneficial to the coursework of secondary EPPs.

Keywords: building community, relationships, secondary classrooms, social emotional learning, student engagement, educator preparation program

Introduction

Building relationships or community in a classroom is critical to increased student engagement and successful classroom management. In an elementary classroom, the teacher has numerous opportunities throughout the day to build relationships with their students. In a secondary setting, the day is often divided into class periods, and consequently, the teacher might only have each group of students for 45-minute blocks. This means secondary teachers are much more likely to have limitations on the amount of time they have to build community in each of their classrooms. Additionally, secondary teacher candidates in the EPP come from a variety of different content areas; therefore, they need instruction on ways to build community that would be conducive to a short time frame and applicable to a variety of disciplines. Since community builders are both brief and could be used in most disciplines, it made sense to add community builders to the content of the secondary classroom management course. Eventually, community builders were added to other secondary EPP courses. Teacher candidates often commented about the usefulness of community builders. The feedback from course evaluations regarding community builders was overwhelmingly positive. One teacher candidate wrote, "The community building activities were a great way to give us ideas as future educators, but they also created a great sense of community in our class." Another teacher candidate shared, "My favorite part of the class was the ice breakers we did almost every day and having each one of us do one and getting the freedom and creative control for it. I hope this professor continues to do these for future classes." Based on the feedback, the instructors determined that adding community builders to the secondary EPP courses provided the teacher candidates with a useful classroom management strategy and created a sense of community in the EPP courses.

Defining Community Builders

Psychologists McMillan and Chavis (1986) claim that a community provides its members with feelings "...of belonging…that members matter to one another and the group" as well as "a shared faith that members' needs will be met through their commitment to be together" (p.9). Other theorists offer claims of community as a social group that provides support and a sense of belonging due to members' common interests, experiences, or goals (Berry, 2017; Brown, 2001;

McMillan & Chavis, 1986; Rovai, 2003). Community builders are not a new idea in organizations or in school settings. Research has shown that when organizational members experience a sense of community it can enhance employee psychological and behavioral outcomes (Boyd & Larson, 2023; Boyd & Nowell, 2017). Similarly, Mintzberg (2009) found successful organizations usually have a sense of community. Building community is also relevant to the context of a classroom. Community building in the classroom is about creating a climate in which students and teachers work toward a shared learning goal and achieve learning through frequent collaboration and social interaction (Adams & Wilson, 2020; Berry, 2019; McMillan & Chavis, 1986).

Significance

Teachers play a significant role in supporting students' development of social skills. Many students learn better when they are together, and teachers must embrace their roles as a community builder by focusing on ways to intentionally promote the building of community among students in their classroom. In order to build a sense of belonging in the classroom, students need to feel connected emotionally, socially, and intellectually. By building and having these connections, students are able to reflect and become self-directed learners (Baker, 2010; Berry, 2019; Brown, 2001; Bush et al., 2010; Lohr & Haley, 2018; Sadera et al., 2009).

During adolescence, students' need to belong increases (Ellerbrock & Kiefer, 2010). Students that have a sense of belonging tend to feel socially connected, supported and respected, and they exhibit fewer behavior problems and have more positive attitudes about classwork and teachers (Romero, 2018). Strong classroom community has been shown to have a direct positive impact on students' achievement (Capone et al., 2018; Cook et al., 2018; Hosan et al., 2017; Mikami et al., 2017) students' academic motivation (Solomon et al., 2000) and engagement (Hosan et al., 2017; Mikami et al., 2017; Van Ryzin & Roseth, 2009.).

When the Covid-19 pandemic occurred, it had an adverse effect on all types of social interactions. As a result of quarantines, in-person connectivity and face-to-face encounters were minimized. The simple act of being in a room with another person had strict guidelines, which hindered traditional means of building and maintaining previously established communities. Given the unprecedented disruption caused by the pandemic, it is crucial to understand its impact on health and development, especially among adolescents as they were particularly affected by the loss of their school shutdowns and minimized social channels (Gotlib et al., 2022). For example, during the pandemic young people had an increased prevalence of Major Depressive Disorder (MDD) and Generalized Anxiety Disorder (GAD) (Li F., 2022). A global meta-analysis of child and adolescent mental health suggests that the prevalence of youth depression and anxiety symptoms doubled during COVID-19 (Racine et al., 2021). Although we are now in a post-pandemic world, there is evidence that the detrimental impact on adolescent mental health has persisted and is still cause for concern (Allegrante, 2023) as the effects of trauma can cause long-lasting effects on the mental health of children and adolescents. Studies have shown that Covid-19 is considered a traumatic event (Cost et al., 2022; Swanson, 2022; Stewart et al., 2022), therefore the need for creating community in the classroom has become exacerbated.

Types for Education

Secondary teachers have a tremendous amount of curriculum to cover within the academic year. Even with so many demands on their instructional time, community builders can be quickly implemented and still have a productive impact on the classroom environment.

Community builders may be initially used as fun icebreaker activities; however, later they can be integrated as instructional strategies for the delivery of content and student engagement. For example, some types might be best situated in the beginning or held regularly once every week, whereas others might be beneficial to have for a few minutes every day. The types and frequency of these depend on the needs of the participants and the classroom.

At the beginning of the semester, EPP instructors modeled a community builder at the start of each class for the first few meetings. Later as an assignment, teacher candidates were responsible for sharing a community builder during class, which they could either design their own community builder or find one online. An additional requirement was for them to share their community builder in their field placements. The three types of community builders that were used are as follows: Get to Know You, Content-based, and Social-Emotional. The get to know you activities help to establish a positive classroom community while the content-based and social emotional both help to maintain a positive classroom community. While there are a multitude of online community builders to draw from, here are some examples that were determined to be highly successful after utilizing them in the classroom for teacher candidates:

Get to Know You

Community Builder	Description
This or That	Create a list of questions that have teacher candidates choose between two options. Read the question and the two options. For each option, teacher candidates go to a different place in the classroom. Call on a few candidates to explain their choices. Some examples of creative questions are: Would you rather do a quick visit back in time or into the future? Are your career goals to stay in the classroom or become an administrator?
Create Narratives	Cut out a variety of magazine pictures that have at least one person or animal. In partners or small groups, candidates select one picture. Each group will make-up information about the person or animal in their picture. It is helpful to provide a list of suggested items to include such as: name, age, where they live, and hobbies. Groups can share their narratives.

Content-based

Community Builder	Description
Items in a Bag	Teacher candidates work in small groups. Each group is given the same bag of items and must collaborate to decide how to categorize each item. The stipulations are that there must be at least two items in each category, and at least four different categories.The items can be physical objects and/or pictures and can be related to the course content. For example for a Social Studies class there could be a compass, some maps, an arrowhead, and pictures of explorers and

	dates. Groups can share their rationale for how they categorized their items.
Interactive Mapping	Using a free map website, such as www.zeemaps.com, have teacher candidates individually create a pin to highlight a specific location. The topics for pin placement could vary depending on the content being covered. Some websites allow for a picture or sound file to be included. After all have an opportunity to pin the location, the instructor could present the map for all to review together and learn about one another. Some examples of topics are: Where are the locations of the battles during the Civil War? What is the birthplace of your assigned character?

Social-Emotional

Community Builder	**Description**
Stress Wheel	Teacher candidates begin by drawing a circle. They divide the circle into sections, with each section being an area that is causing them stress. It is helpful to list possible stressors for the candidates to refer to such as: coursework, family, and health. Candidates can determine how many sections to include and the size of each section. The larger the section the higher the stress. As candidates share their wheels, discuss the common stressors and possible coping strategies.
Song Barometer	Teacher candidates will use their phone to find a song that captures the emotion they are feeling at that point of the semester. Depending on the number of teacher candidates, these songs would then be shared in small groups or with the entire class.

Conclusion

Integrating community builders into the secondary EPP courses provided teacher candidates with an effective classroom management strategy. Although this strategy would benefit all types of classrooms, it is uniquely suited for secondary classrooms. Through this process, teacher candidates gained experience on creating, modeling, and sharing community builders within their field experience placements. The candidates will also be able to use these strategies during their internships and future classrooms. Furthermore, sharing community builders in EPP courses promoted positive relationships, culture, and climate across the program. Community builders can be modified for use in other higher education departments where they then can create supportive climates and encourage all members to feel a sense of belonging.

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"If There is Great Questioning Happening, I Want to be There": Teacher Learning through Classroom Embedded Professional Development

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Abstract

This article reports the results of a study focused on how teachers learn about planning for questioning within the context of Classroom Embedded professional development sessions. Survey data were collected from middle school mathematics teachers participating in a three-year professional development program emphasizing problem posing and attending to students' strategies for solving problems. Responses indicated that peer observations were most impactful to their classroom practice, particularly with respect to questioning. They preferred learning about questioning while observing a host teacher with students in real-time lessons compared to seminar style activities such as watching and reflecting on videos of teachers and students and discussing assigned readings. The protocol for the Classroom Embedded sessions in which all of the participants observed in a host teacher's classroom is described.

Keywords: planning for questioning, middle school mathematics, classroom embedded professional development, problem posing

Introduction

The dynamic nature of teaching mathematics offers challenges and possibilities for professional development (PD) closely aligned with classroom practice. Seminar style PD sessions allow the opportunity for teachers to learn about how students solve problems, and instructional practices to encourage sharing of strategies and discussing underlying mathematics. However, these sessions are limited in terms of how teachers use student work to plan questioning that moves students in their learning (Loucks-Horsley, et al., 2003). Observing an expert teacher pose questions and facilitate the sharing of students' responses to mathematical activities gives participating teachers confidence to try similar approaches (Guskey, 2002).

This article presents survey responses from middle school teachers who participated in a three-year professional development (PD) program focused on problem posing and questioning strategies designed to probe student thinking and orchestrate class discussions around mathematical concepts. One of the primary types of PD sessions involved observing peer teachers on at least four days each of the three years of the program, referred to in this article as "Classroom Embedded" sessions. These sessions predominantly occurred in classrooms with diverse student populations and host teachers who had completed the PD or were in their third year of participation in the program. An example from an eighth grade Classroom Embedded session is shared to illustrate the cycle of this type of PD session.

Related Literature

This section reviews the literature of professional development programs for mathematics teachers that prioritize posing problems that elicit diverse strategies. Prior studies of PD programs that focus on problem posing, questioning, and lesson study sessions are reviewed. The framework for Classroom Embedded PD sessions is described and differentiated from other types of PD.

Problem Posing

Posing a problem with multiple entry points provides opportunities to explore students' thinking in detail (Celic & Guzel, 2018; Lee et al., 2018; King, 2019; Vale et al., 2019). For example, King (2019) found that teaching through problem solving was an effective model for encouraging change in beliefs about mathematics instruction and learning. In particular, they increased their acceptance and understanding of the role of orchestrating student sharing of multiple strategies (p. 179). Celic & Guzel (2018) found that Lesson Study PD improved teachers' content knowledge and awareness of students' thinking about mathematics.

Questioning Strategies

A key component of effective mathematics instruction is posing questions that elicit information about students' thinking and encouraging reflection and justification (NCTM, 2014). Several studies have documented the effects of teacher questioning on their practice and student learning (Capraro, et al., 2010; McCarthy, et al., 2016; DeJarnette, at al., 2020). DeJarnette, et al., (2020) analyzed the literature with respect to questioning and found that prior studies had focused on differences between higher and lower order questions and types of probing questions teachers asked to explore students' thinking. They described lower-order questioning as those that may only require simple or one-word responses from students and higher-order questions require more extended responses and place higher cognitive demand on students (p. 4).

The practice of asking higher-order questions is a complex aspect of problem-posing and organizing classroom discussions around students' strategies. Smith & Sherin (2019) described practices important to selecting and sharing students' work during lessons. This dynamic is different in each class and dependent on factors such as the problem, the learning goal, and the types of thinking exhibited by students. It is part of instructional practice that is enhanced by seeing peer teachers engage in this activity with their own students (Estrella, et al., 2020).

Professional Development Structures

Many professional development programs involve various structures including seminar style, distance and video-based sessions, professional learning communities, and sessions in which teachers have the opportunity to observe a peer teacher or expert teach a lesson to students in real-time. Lesson Study lessons have been described and encouraged for decades (Loucks-Horsley, et al., 2003). Vermunt, et al., (2019) incorporated a type of lesson study structure that included observations of teachers in real-time and collective analysis of data gathered as part of the observation which were also referred to as research lessons (p. 62). Other research on the impact of lesson study PD on teachers showed that this type of structure helped teachers maintain high cognitive demand of problems enacted (Estrella, et al., 2020).

Classroom Embedded Design

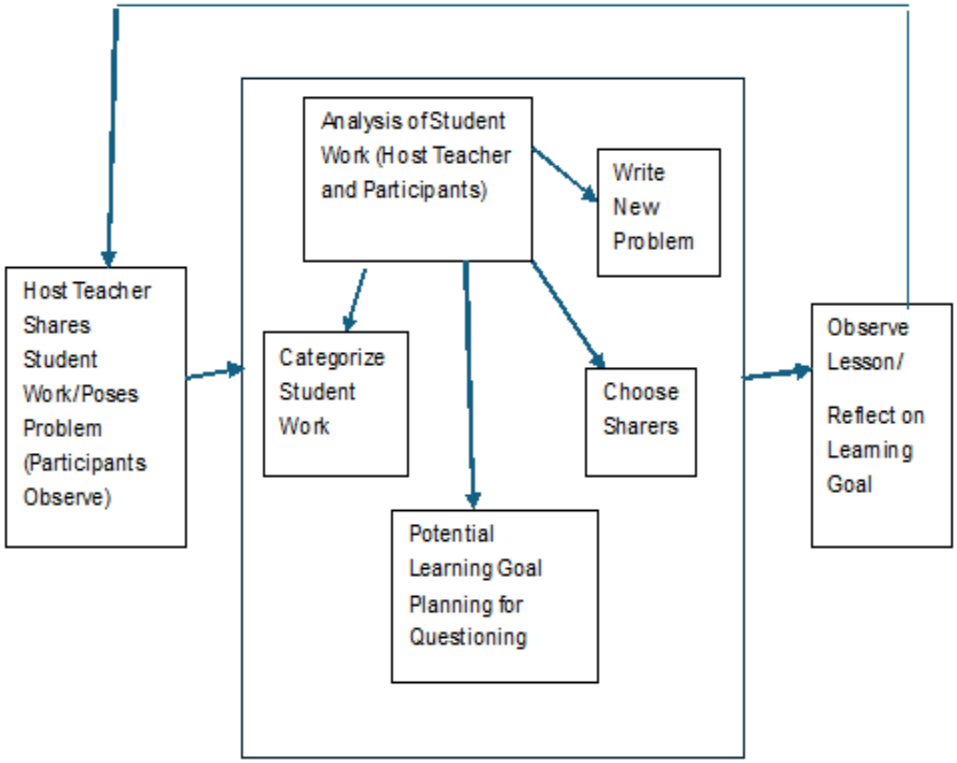
Classroom Embedded PD sessions are similar to Lesson Study lessons in that teachers observe a lesson with students in real-time (Loucks-Horsley et al, 2003; Lewis & Perry, 2017). Several aspects unique to Classroom Embedded PD include the commitment of an entire six hour session to work in a classroom of a host teacher, and all participants observing once or twice in the same day. This could include between 10 and 30 teachers observing at one time. In middle schools, this requires support from the entire school community in terms of space for teacher planning and reflection, modifications to the schedule in cases in which students are observed both solving and sharing their strategies for a problem after teachers have examined

and categorized student work. Prior research showed that teachers responded positively to Classroom Embedded style PD sessions at the middle school level (Nielsen, Steinthorsdottir, & Kent, 2016).

The Classroom Embedded PD day is comprised of one or two hours of observation in the host teacher's classroom, and two to four hours examining students' written work for commonalities and differences, sorting strategies into three or more different categories and describing at least one learning goal to extend students' understandings of the topic. The cycle, shown in Figure 1, is flexible at the middle school level based on the schedule of the school and the mathematics courses, the host teacher's schedule.

Figure 1

Classroom Embedded PD Cycle



A common agenda for a Classroom Embedded PD session is to watch the teacher pose the problem to their students and watch the different strategies students construct, collect the papers, complete the activities in the middle box and then observe the host teacher orchestrate the sharing and questioning later in the day. However, as shown in Figure 1, the Classroom Embedded PD session can also begin with sorting student work from a problem posed the day prior to the PD sessions. All participants, including the host teacher, observe or sort student work, and decide which students should share their strategies and in what order based on a learning goal derived from student work. Participants return to the host teacher's classroom with the same students and observe the sharing process. Lastly, they reflect individually and with the host teacher on whether or not aspects of the learning goal were met by the students.

Initially, the facilitators would pilot a task with a group of students and conduct an initial revision of the problem. The host teacher would then pose the revised problem to students before

or during the classroom embedded session and the teachers would analyze the student work and decide on a new revision or new problem to pose. All participating teachers would observe either once or twice in the host teacher's classroom. The structure in this protocol was adapted based on the schedule of the host teacher and the school schedule. Almost all these sessions entailed observing the same group of students twice in one day.

The classroom embedded sessions in this study varied in terms of grade level and content. However, commonalities included deciding on a problem with multiple entry points, observing the solving/sharing of a problem, and writing a follow-up problem based on detailed analyses and categorization of student responses. The host teachers are observed by the PD facilitators ahead of being selected to ensure that problem posing was a common routine in their mathematics instruction and that students were encouraged to share diverse strategies as part of the lesson.

Research Questions

- What professional development activities were considered most useful to teachers participating in this three-year PD program?
- What were the most common rationale statements provided for the highest ranked PD activities?
- How are questioning strategies incorporated in a Classroom Embedded PD session?

Methods and Data Analysis

Forty-six middle grades mathematics teachers spanning grades fifth to eighth grade completed the survey. It was a locally developed instrument based on the unique design of the program based on problem posing in mathematics instruction. The PD leaders had facilitated several cohorts of participants prior to the group described in this article. The teaching experience of the participants ranged from one to 25 years (average: 6.5 years) and included three different districts, two of which were characterized as serving high needs student populations. The third district was a rural district within the same region as the other two districts. The sample was a convenience sample based on teachers who had volunteered for the PD program and were supported by their respective districts to attend. The survey was piloted with a prior cohort of the PD who had completed all three years of the program. The results presented in this article will include the ranking activity and open response follow-up item from the larger survey (See Appendix for the actual survey items).

Analysis of Surveys

The survey was administered in paper and pencil form on the last day in each of two consecutive years of the PD with 62% first year participants, 27% second year participants, and 12% third year participants. Due to changes in teaching assignments and attrition within the PD program, the participation rate was highest among those in their first year of the program. In question one, teachers were asked to rank 10 professional development activities from 1 (most valuable) to 10 (least valuable). The 10 activities were: watching videos of students solving problems, predicting student solution strategies, observing in classrooms, interviewing individual students, sorting student work, planning with other teachers, learning about problem types, videos of classroom instruction, questioning techniques, and readings. The second question was open-ended and asked participants to describe how the item they ranked as number one impacted their teaching.

Results

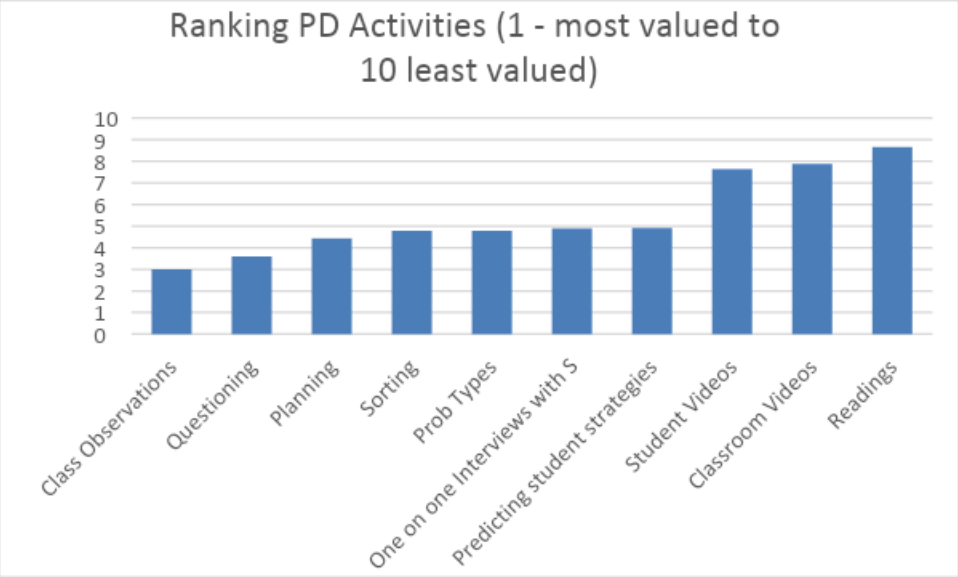
The results are divided into two sections. The first section provides the results of the surveys from the 46 teachers. The second section describes an example Classroom Embedded session in an eighth grade class to illustrate how this type of PD is structured during an actual school day with students in their mathematics class. It demonstrates the planning of the types of questions the host teacher asks from examination of student work and discussion of a meaningful learning goal.

Ranking Activities

Teachers were asked to describe the impact of their highest rated PD activity on their teaching. Figure 2 shows the average results of how teachers ranked the PD activities.

Figure 2

Ranking of PD Activities



The top four PD activities showed that classroom observations, questioning, planning with other teachers and sorting student work were perceived as most impactful by the participants. All four of these activities were associated with Classroom Embedded PD. In contrast, watching videos and completing readings were considered to be the least impactful on participating teachers' implementation of ideas from the PD program as a whole.

Responses from open-ended items indicated a strong preference for the structure of the classroom embedded sessions. Of the 46 respondents, 19, or 41% ranked "Observations" as the number one most impactful aspect of the PD program. Of those 19 respondents, 15, or 79%, ranked questioning strategies as second, third, or fourth, as most impactful behind classroom observations.

Rationale Statements

Open coding was used to identify themes across narrative responses. There were two dominant themes on the benefits of classroom embedded PD sessions: questioning strategies and orchestrating class discussions. Table 1 shows examples of rationale statements used by

teachers when asked to describe how the activity they ranked first in terms of impact on their own mathematics teaching.

Table 1
Example Rationale statements

Teacher	Statement
BH, Eighth Grade Teacher, 13 years teaching experience, first year in PD program	"*Grew from watching questioning strategies—how teachers presented the problem, notated student work, and interactions with students*"
RC, Seventh Grade Teacher, five years teaching experience, second year of PD program	"*I have enjoyed watching the teachers' questioning skills, interactions….I always find take aways, things I want to implement or try with my students or I see things to be aware of with my kids….*"
RC, Sixth Grade Teacher, six years of teaching experience, first year in the PD program	*"I tried to implement the different ways for students to share their thinking…pairs, table or show class. I found it helpful to watch effective questioning. Value wait time, give time for thinking and processing. Reading questions aloud to struggling readers."*
AC, Seventh Grade Teacher, two years of teaching experience, second year of PD program	*"Seeing/feeling rapport and dynamics.…taking in an authentic lesson to apply to our own lessons, gaining strategies of discussion, gaining strategies of facilitating."*
MT, Sixth Grade Teacher, three years of teaching experience, third year of PD program	*"Sometimes, especially early on, it is challenging to imagine what a problem posing classroom really looks like. Seeing it done beginning to end is powerful. As I became more experienced, it was still so helpful to gain new strategies for questioning, student talk, etc. Plus, it helped me build relationships with other like-minded teachers"*

Classroom Embedded Session Example

When a teacher at a middle school volunteers to serve as host teacher for a Classroom Embedded day, the session requires coordination from the school administration and peer teachers in order for the participants to observe students twice with a break in between to complete tasks (see Figure 1). In this example, an experienced eighth grade teacher, Mrs. Abbot, served as the host teacher for a Classroom Embedded PD session for 19 participants. These teachers along with the two facilitators observed the same group of students twice during the school day. Mrs. Abbot received permission from the building administration to have students from one of her morning classes participate during their regular class period and return in the afternoon for sharing strategies.

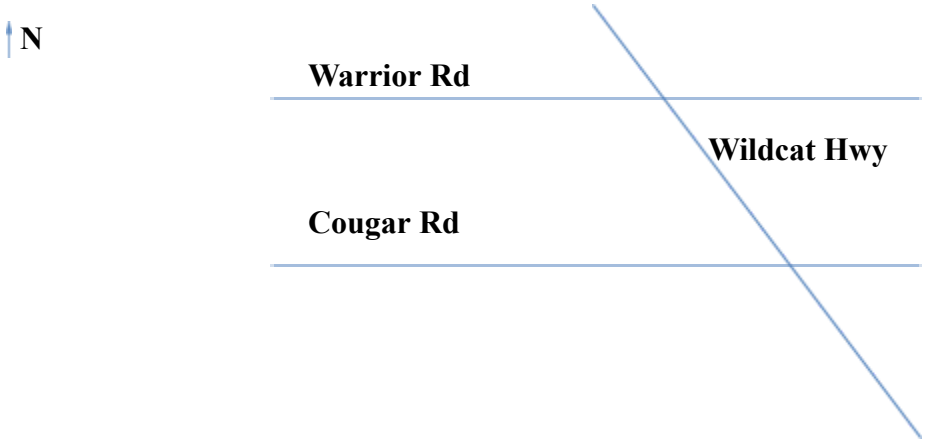
Mrs. Abbot had participated in three years of the PD and was in her fifth year of teaching at the time of this session. In order to maintain continuity with her planning and unit of instruction, every effort was made to pose a problem consistent with her topic of instruction for the day of the Classroom Embedded session. In this case, the content of the lesson was parallel lines cut by a transversal. Mrs. Abbot designed a word problem, shown in Figure 3, related to a

new road intersection being developed near their school. She posed this problem to her students the day before she hosted the classroom embedded session.

The Classroom Embedded session began with Mrs. Abbot describing her 20 students. She had a culturally diverse class with 12 Latino, five Caucasian, and three African American students. There were 20 students total in her class. She also gave background on content leading up to this problem being posed which had primarily included vocabulary such as parallel lines, transversal, corresponding angles, alternate interior angles, etc. The participating teachers reflected on the problem and the strategies Mrs. Abbot's students might use to solve the problem.

Figure 3
Road Intersection Problem

A highway named Wildcat is going to be built to join West Town to East Town and will go through two roads. Warrior Road and Cougar Road are parallel.



The head road constructor for the intersection of Warrior and Wildcat road says that if you are traveling north you want to turn right, you would have to turn at an angle that is 2 ½ times 48 degrees. The head road constructor for the intersection of Cougar and Wildcat says that you have to turn 96 degrees plus some amount to turn right on Cougar if you are going north on Wildcat Hwy. How much would that amount need to be if you want Warrior road and Cougar road to be parallel?

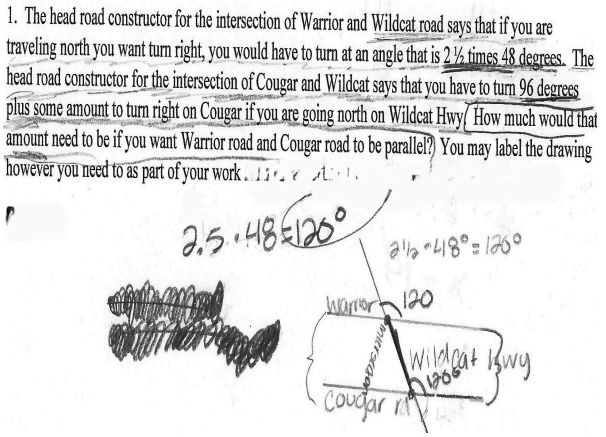
The 19 teachers, two facilitators and Mrs. Abbot then went to her classroom to watch her pose the problem to her students. The teachers each had a clipboard to take notes and stood around the room while Mrs. Abbot began her lesson. She passed out the Intersection problem and called on a student to read the problem out loud. She asked students if they had seen roads like this on a map or GPS. Several students nodded. As students began to work on the problem, Mrs. Abbot monitored their individual progress and answered questions. The participating teachers walked around the room and took notes about the student work but did not interact with students. After 20 minutes, the papers were collected and the participating teachers went to the seminar classroom.

Mrs. Abbot made copies of the student work and passed out copies of the student work for the teachers to categorize in grade level groups. The participants and the host teacher discussed the strategies and reached consensus on three different categories of strategies:

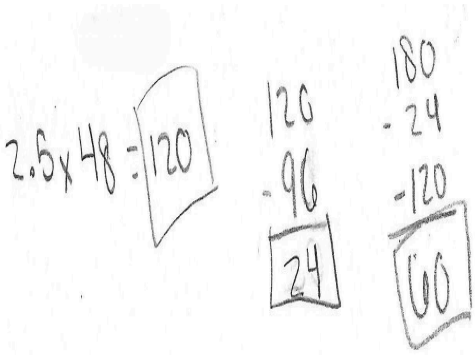
operational (using column computation methods), using equations, and incomplete or incorrect strategies. Figure 4 shows an example of each type of strategy.

Figure 4

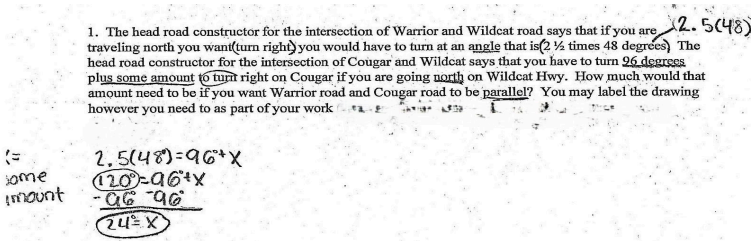
Strategies for the Intersection Problem



Taylor's Strategy



Hector's Strategy



Alicia's Strategy

The participating teachers and host teacher noted that nine students had a productive start to the problem like Taylor but did not complete the problem. They also determined that seven students solved the problem similar to Alicia but did not set up an equation with an unknown and solve for the unknown as she and two other students had done. They also noted that many students used sentence frame strategies to highlight important parts of the problem needed to solve the problem. Mrs. Abbot shared with the participants that literacy strategies were an important aspect of her mathematics instruction and she integrated contextualized problems frequently in her teaching practices.

The host teacher and participating teachers decided that a meaningful learning goal would be to have a student from each category share and *discuss the use of equations as a way to be more efficient in their problem-solving processes*. They also discussed questions Mrs. Abbot could ask students as they began to share their strategies. Questions such as, "What did you understand about the problem?", "How did you know the right hand turns would be the same?", "How are the strategies alike?", "How are they different?" were offered as ideas to ask both the presenting students and the other students in the class.

The students then came back to the classroom and the PD participants observed the sharing. Mrs. Abbot first asked Tandy to share her strategy. Tandy described how she underlined important information in the problem and circled the question being asked. She shared how she multiplied 2.5 by 48 and got 120 degrees. She said she knew that the right turn for Wildcat highway would be the same turn since the roads were parallel. Mrs. Abbot then asked the students to discuss what they noticed and wondered about as they looked at Tandy's strategy. One student said she did the same thing. Another student said that he got 24 as his answer.

Mrs. Abbot then invited Hector to share his strategy. She noted that he also had 120 degrees in his answer. Hector explained that he knew both turns were 120 degrees but that he also had to find out how much would be subtracted from 120 degrees in order to determine how much to add to 96 to make sure the turns were equal for Warrior and Cougar roads. She asked the students what was alike and what was different between Tandy and Hector's strategies. A student noted that Hector also subtracted 96 degrees from his 120 degree turn. Mrs. Abbot asked the class why they thought Hector might have included the extra step. Another student stated that he was probably trying to figure out how much to add to 96 degrees so that both turns were the same amount. Hector confirmed that was his reasoning.

Mrs. Abbot then put Alicia's paper next to Hector's strategy on the document camera and asked the students to compare their strategies.

Mrs. Abbot: What do you notice about these two strategies?
S1: They both got 24 as their answer.
S2: Alicia used equations and Hector used multiplication and subtraction.
Mrs. Abbot: Did Alicia use multiplication and subtraction? (students responded yes)

Mrs. Abbot then asked Alicia to share her strategy.

Alicia: I knew that both right turns had to equal 120 degrees because the roads are parallel so I set up the equation to make them equal.
Mrs. Abbot: What does x stand for in your equation?
Alicia: The degrees that would make 120 for a right turn on Cougar road.
Mrs. Abbot: Do you think their strategies are more alike or more different?
Ss: More alike

As the lesson ended, Mrs. Abbot asked them if Tandy was on the right track with her work and students agreed she was. She asked students to think about ways they might represent unknowns in story problems in future lessons.

Following the lesson, the teachers had the opportunity to write individual reflections about observing the problem posing, solving and sharing in real-time with students. They shared that they learned so much by seeing students in action in a real class setting and seeing how a peer teacher organized different components of the lesson. As the survey responses also indicated, questioning was challenging for them in problem posing lessons and seeing the kinds of questions asked benefited them in their own attempts to pose problems with multiple entry points with their own students.

Conclusions

Seeing is Believing

Questioning students and building instruction off their thinking is a complex endeavor as part of teaching mathematics for understanding. Showing videos of good teaching practices, including the use of effective questioning of students is helpful for teachers but doesn't provide the same learning experience as seeing how a teacher responds to students within the dynamic setting of classroom instruction. Classroom Embedded sessions require extensive planning, organization, and a teacher willing to host 15-30 teachers observing in their classroom at one time. Given the overwhelming positive response participating teachers had to these experiences, Classroom Embedded sessions are a potential pathway to substantial changes in how teachers approach their own mathematics instruction and responses to their students' learning.

Throughout the three year PD program, teachers had opportunities to pose rich problems based on what they learned in the seminar style sessions. They also sorted their own student work for mathematical themes and became accustomed to having their students share their strategies. Their reflections indicated that questioning to illuminate big ideas within the discussion of student work was an ongoing challenge for them. The Classroom Embedded sessions focused on planning specific questions with other teachers observing the expert/host teacher pose those as students shared and discussed strategies. The example responses in Table 1 further demonstrate that questioning was a specific instructional strategy takeaway from the Classroom Embedded PD. They realized that questioning was a determining factor in whether or not a lesson was successful in terms of students reaching a mathematical learning goal.

Future Research

There are calls for dramatic changes in how mathematics is taught. Some of these changes require critical questions about classroom and curricular structure in order to provide more equitable learning environments for students (e.g. NCTM, 2020). In *Catalyzing Change in Middle School Mathematics: Initiating Critical Conversations*, the authors recommend shifting from "*deficit-based*" to "*strengths-based*" beliefs about students. This requires teachers to modify their thinking about student processes and products. Creating an environment in which all students are encouraged to share their thinking for incorrect/incomplete responses requires changes to their overall classroom environment. Observing how peer teachers create lessons designed to promote learning for all of their students gives them confidence and tools to try new ideas and take risks with their own students. These teachers found that the more opportunities they had to observe lessons and participate in the planning of the questioning for those lessons, the more comfortable they were trying new ideas with their own students.

Teachers' use of questioning during instruction is considered to be an essential practice needed to extend students' thinking and reasoning about mathematics (NCTM, 2014, 2020; Smith & Sherin, 2019). Smith & Sherin (2019) highlight the role of questioning in assessing and advancing students' learning during mathematics lessons. The Classroom Embedded sessions were perceived by the majority of teachers involved in the PD program to be the most impactful to their instruction. The opportunities to observe peer teachers' questioning strategies during the lessons was considered the most important aspect of the PD that teachers could use in their own classroom.

Effective questioning of students to probe and extend their thinking about important mathematical concepts is challenging for many teachers. While questions such as "how" and "why" are useful in most lessons, more research is needed on how teachers develop productive

questioning strategies across a variety of mathematics topics and grade levels. The results of this survey indicate that teachers perceived questioning strategies for specific lessons to be beneficial to their own instructional practice. However, this is a relatively small sample of teachers. Future research should consider the types of content-specific questioning strategies that maximize students' learning across grade levels and mathematics topics.

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Appendix - Survey Questions

Thinking Mathematically – Grades 6-8 Survey

Initials: _____

TM Year: _____ Current Grade Teaching: _____

1. **Rank the following components of TM professional development in order of Most (1) to Least (10) impact on your mathematics teaching:**

Videos of students solving problems_____ **Readings _____**

Solving problems the way you think your students would _____

Classroom Observations _____ **Interviewing Students _____**

Sorting student work _____ **Planning/discussions with other teachers_____**

Learning about problem types/strategy levels _____

Videos of Classroom Instruction _____ **Questioning strategies _____**

2. For the component that you ranked as #1 above, describe how it has impacted your teaching.

Exploring the Potential of Artificial Intelligence in Teacher Education

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Vinson Carter, University of Arkansas Fayetteville

Abstract

This article examines the evolving field of teacher education and the need to adapt to these changes. Artificial Intelligence (AI) offers a transformative potential for teaching methods and information sharing. Integrating AI into teacher preparation programs can help future educators use AI responsibly in the classroom. The authors argue that AI should be viewed as an opportunity for growth rather than a threat. They advocate for ongoing professional development for teacher educators, ethical AI practices, and training teacher candidates to critically evaluate AI-generated content. By embracing AI with ethical considerations, teacher educators can better prepare future teachers to thrive in a dynamic educational environment.

Keywords: Artificial Intelligence, Teacher Education, Best Practices, Ethical Considerations

Introduction and Purpose

Over the last few years, and even more recently, the term artificial intelligence or AI has come to the forefront as a global topic of conversation and debate. Copeland (2023) defined AI as "the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings." AI bombards our daily headlines and has become an interesting topic of conversation in many institutions of higher education. Just as the launch of the Sputnik satellite by the Russians marked the dawn of the space age and a significant technological leap, AI represents a profound shift in the way that we utilize technology both inside and outside of the classroom. AI is transforming our world, revolutionizing everything from manufacturing, healthcare, transportation, and education. From the way that we develop personalized learning and instructional tools, to the way that we use data to inform policy decisions, AI has the potential to significantly enhance learning and student outcomes. However, for many, this is a scary thing. Educators must evaluate for themselves if utilizing AI is synonymous with cheating. At our institution, many have taken a hard stance on the 'no AI' allowed policy. For others, there is a cautious awareness that we need to teach our learners how to utilize AI as an innovative tool while also considering the ethical ramifications.

This article aims to offer teacher educators a comprehensive view of the evolving landscape in teacher education. It covers several key aspects, including the role of AI in education, its potential classroom applications, challenges and ethical considerations associated with its use, and future-oriented best practices and guidelines.

Background and Context of AI in Education

While Sputnik served as a wake-up call for the nation and functioned as a focusing event that drew the spotlight to a national issue (Powell, 2007), AI has become a pervasive presence in various aspects of our lives, including education (Borenstein & Howard, 2021). Educators across the globe must choose how they will respond to this powerful and life-altering creation. A future where AI replaces teachers is not realistic, yet the role of the teacher can evolve and be transformed through the systematic and effective use of AI tools (Holmes et al., 2023). Disregarding its presence neither tackles AI-related issues nor provides any assistance to others

who will inevitably use the technology. Leveraging the capabilities of AI provides teachers with numerous opportunities to improve their teaching methods and practices. Many have implemented AI applications to not only refine their instruction but also to boost their students' abilities to construct knowledge and share their findings. Some educators have utilized AI tools to assist students with personalized tutoring using AI systems (Niemi et al., 2023). Many educators recognize the advantages of AI tools and actively seek to use them to enhance student progress monitoring and communication effectiveness (Berendt et al., 2020).

AI tools now permeate almost every aspect of business, commerce, and global education systems. Some educators view Artificial Intelligence in Education (AIED) as a potential tool to enhance teachers' effectiveness by opening teaching and learning possibilities that might otherwise be difficult to achieve, yet others see AI as a strategy to supplant educators rather than a tool to assist them in teaching more effectively (Holmes et al., 2023). *How*, *when*, and *if* AI should be utilized in the educational classroom remains a subject of intense debate. Although AI has been widely adopted across various industries, Holmes et al. (2023) noted that minimal research has been conducted and no guidelines established on the ethical use of AI in education. Students' fundamental rights regarding surveillance and using information collected about them are two concerns worth addressing and considering before educators select and implement AI into their coursework expectations (Berendt et al., 2020).

The Changing Landscape of Teacher Education

A time-traveling visitor from the early 1950s before the launch of Sputnik would likely be astounded by the advancements that have taken place across the globe in areas such as farming, manufacturing, communication, and medical procedures over the last few decades; however, they may feel right at home in a modern classroom (Ferster, 2014). Federal legislation and educational policies have led to changes in the landscape of the classroom regarding accessibility and inclusion practices, yet the processes that many educators have remained the same. Dress codes have evolved, and access to technology has improved, yet modern classrooms often still closely resemble those of previous decades. Admittedly, educational practices have continued to advance in a post-pandemic society as teachers rely more heavily on technology to meet the needs of learners in remote and hybrid settings. Yet, regardless of the educational setting (hybrid, in-person, or remote), teachers today typically serve as providers of information.

Recently, Mulvihill and Martin (2023) examined the advantages and challenges of virtual and in-person learning with a noteworthy finding reference by Dr. Kim Koh of the University of Calgary, in which she mentioned the potential of emerging technologies such as AI and ChatGPT (Generative Pretrained Transformer) and how these tools will revolutionize not only teaching but also learning. As educators responsible for training future teachers, we face the task of equipping our teacher candidates with the skills to effectively integrate and navigate the use of AI and other emerging technologies in the classroom. AI tools challenge educators to embrace a paradigm shift, compelling them to modify their pedagogical approaches, including how they acquire and transmit information. Over the past few years, AI tools have become increasingly more accessible to the public and integrated into various aspects of business and industry (Chan, 2023). Teacher candidate experiences with AI at the university level can be designed to replicate real-world expectations and to better prepare them for the proper implementation of AI in the workplace (Chan, 2023). Teacher educators should evaluate how to best prepare teacher candidates for educationally defensible and ethical ways to interact and utilize AI in the classroom. Teacher candidates who have intentional and specific interactions with AI under the

guidance and direction of the educator are more likely to be empowered and informed on specific strategies and resources for using AI responsibly.

Understanding Applications of AI in Teacher Education

An examination of societal factors over the past decade highlights several significant changes. Students have evolved in terms of their preferences, behaviors, and expectations. Fashion trends have shifted, reflecting changes in culture and style. Technology has also advanced rapidly, shaping various aspects of daily life including the integration of AI. Despite these transformations, many educators have not adapted or updated their teaching methods to align with these changing times. Teacher educators serve as role models for teacher candidates, and as such they should model lifelong learning and flexibility when considering how and when to implement AI in the classroom. More than three decades ago, the report *A Nation at Risk* emphasized the importance of lifelong learning by stating that "without lifelong learning, one's skills will quickly become outdated" (Gardner & Others, 1983). Educators presently have a wide array of educational tools at their disposal enabling them to customize students' learning experiences, design effective curricula, develop assessments, provide feedback, and aid in classroom management. Teacher educators who utilize these tools, and model effective and ethical implementation do not have to fear becoming outdated or irrelevant to their teacher candidates.

In contemporary classrooms, educators are expected to be proficient not only in subject-specific technology but also in how to effectively employ these tools to advance each student's educational development (Ryan et al., 2022). The application of technology in the real world has changed, and as such, specific opportunities for teacher candidates to develop their Technology Pedagogical and Content Knowledge (TPACK) proficiency are critical (Ryan et al., 2022). The TPACK model, as referenced by Ryan et al. (2022), delineates seven knowledge domains for educators, which can seem overwhelming for teacher candidates. The domains in the TPACK model encompass content knowledge, pedagogical knowledge, technology knowledge, pedagogical content knowledge, technological content knowledge, technological pedagogical knowledge, and technological pedagogical content knowledge. For novice teacher candidates, the expectation of mastering all seven aspects of the TPACK model can indeed seem daunting. However, teacher educators can play a pivotal role by serving as role models and illustrating how to effectively integrate AI as a tool to enhance the educational progress of teacher candidates. Their guidance and demonstration can assist aspiring educators in navigating and gradually developing proficiency in these essential domains of the TPACK model.

Educators often employ technology in a way that merely substitutes one tool for another, without substantially altering how they teach. An example of this is using PowerPoint instead of traditional tools like overhead projectors or chalkboards. The SAMR model, developed by educational researcher Ruben Puentedura (2010), classifies four different degrees of classroom technology integration: Substitution, Augmentation, Modification, and Redefinition. Puentedura's model envisions that technology has the power to redefine learning in the classroom. He implores that substitution should not be the ultimate objective as educators implement technology into the classroom (Terada, 2020). A more transformative approach to integrating AI tools into the classroom would involve embracing various levels of the SAMR model, such as augmentation, modification, and even redefinition of the educational tasks at hand. AI tools accessible to educators today can augment, modify, and even redefine how they approach curriculum development, assessment creation, feedback provision, and classroom

management.

In 1983, Gardner and other educators advocated for a transformative approach to education in the hallmark report *A Nation at Risk*. *A Nation at Risk* emphasized the urgency to push the boundaries of individuals' abilities to prepare students for the constantly evolving skill sets required in our ever-changing world. Today, educators have a unique opportunity to achieve this vision more than ever by ethically incorporating AI tools into their classrooms. Ertmer and Ottenbreit-Leftwich (2010) found that teacher candidates are more inclined to use technology when they feel confident in their ability to use it effectively. By integrating specific and focused experiences within teacher preparation programs, teacher educators can demonstrate how to implement AI effectively and ethically in the classroom. These experiences can serve as powerful tools for educating and, more significantly, empowering teacher candidates with the strategies and confidence they need.

Addressing Ethical Considerations and Challenges

Before deciding which AI tools to use in the classroom, educators need to understand the ethical concerns and educational consequences linked with their choices. Popham (2020) uses two evaluative guidelines to examine teacher practice related to assessment: professional ethics and educational defensibility. When examining the integration of AI in the classroom, educators face the dual challenge of evaluating both the ethical concerns associated with AI use and the educational advantages and disadvantages presented. They must weigh the potential benefits for student learning, research skills, and critical thinking against the ethical considerations to make informed decisions. Educators should also consider implementing an AI educational policy to ensure teacher candidates are aware of concepts such as bias, plagiarism, and potential consequences for improper use of AI in academic settings (Chan, 2023). Educators must prioritize safeguarding students' data and privacy, while also remaining mindful of students' rights and choices concerning the potential discrimination based on their demographic and other identifying information. While teachers who implement AI may possess a sincere desire to support student learning experiences while enhancing their effectiveness; motivation is not the only factor to consider. Holmes, et al. (2021) highlighted the stark difference between doing ethical things and doing things ethically. These concepts must be at the forefront of educators' minds as they select AI tools to employ in the classroom. Educators who model autonomy, accountability, elimination of bias, and transparency when using AI set the tone for proper implementation and integration of AI.

One major challenge related to AI use is students' use of such tools to cheat or plagiarize (Chan, 2023). Another challenge and concern of educators is that the use of AI-generated text could lead to a decrease in students' writing abilities and critical thinking skills (Civil, 2023; Warschauer et al., 2023) as cited in (Chan, 2023). In response to these challenges, some higher education institutions are resorting to paper and pen assessments while others are reviewing their policies and procedures related to plagiarism and academic integrity (Chan, 2023). Implementing strategies such as monitoring students' utilization of AI, mandating the submission of ChatGPT prompts and responses, and requesting written or verbal reflections on their thought processes when evaluating chat responses can be effective in mitigating instances of cheating and plagiarism. It is essential to educate teacher candidates about the importance of being transparent when using AI and to teach them proper methods for citing AI sources utilized in their work. Additionally, requiring teacher candidates to reflect and critically analyze the feedback received from AI will better prepare students for the ethical and educationally defensible use of AI if they

choose to implement AI tools in their future classrooms.

The Road Ahead: Best Practices and Guidelines

Good teachers use the resources that they have available to them. Many teacher educators advise their teacher candidates that smart teachers borrow ideas and make them even better. Teachers are in the practice of 'not reinventing the (proverbial) wheel' but modifying ideas to meet the needs of our students. Teacher educators can apply Wiggins and McTighe's (2005) Understanding by Design (UBD) model to guide their approach when considering the integration of AI in the classroom. This three-stage process involves: identifying the desired results, determining acceptable evidence, and planning learning experiences (Wiggins & McTighe, 2005). Teacher educators can adopt this model when considering best practices and guidelines for the implementation of AI in the classroom.

Using the UBD model, teacher educators should identify the desired results of teacher candidates graduating from their program. Teacher preparation programs must evaluate the expectations for individuals who complete the program and obtain a teaching license. What does an effective teacher look like in today's classroom? The second stage of the UBD model involves determining acceptable evidence (Wiggins & McTighe, 2005). Once the desired result is established, teacher educators work backward to identify how they will assess whether teacher candidates have achieved this goal. What are the pieces of evidence that demonstrate the successful attainment of the intended outcomes? How can we measure teacher candidates' abilities related to the desired outcomes established by the educational institution? Finally, the third step of UBD involves planning learning experiences (Wiggins & McTighe, 2005). With the desired results and acceptable evidence in mind, teacher educators develop learning experiences that are designed to help students reach the intended outcomes. Are there specific aspects of an educator's job that could be enhanced or transformed through the integration of AI? Embracing this backward design model, teacher educators may encounter the need to rethink their curriculum, reconsider their perspectives on technology integration, and explore how to effectively incorporate AI into the classroom to align with their educational goals.

In the field of education, the accuracy of information is of paramount importance. Following the UBD design model, if institutions of higher education desire graduates who can critically evaluate sources of information, analyze data, and make inferences from research findings, specific opportunities must be embedded within teacher education preparation programs. Teacher educators using AI should apply critical thinking and effective research skills to verify information from trustworthy sources. More importantly, when teacher educators integrate AI into the classroom, it is imperative that they model not only how to use the AI technology, but guide teacher candidates to identify bias and demonstrate critical thinking skills (Mhlanga, 2023).

It is important to note that AI tools were not designed to replace in-person instruction from high-quality educators, nor will they do this (Mhlanga, 2023). The connections formed between students and teachers are unique and cannot be duplicated with AI. Even with sophisticated AI algorithms, the human aspects of these relationships, such as sensory experiences including sight, smell, touch, vocal tone, and empathy, are irreplaceable. Teachers who understand their learners' strengths and weaknesses, interests, and hobbies can use these concepts to tailor their assignments, instructions, and personalized activities designed to assist each student (Kim 2020, Attard & Holmes 2020, Alam 2022). Once teachers know more about their students, they may consider implementing AI teaching assistant tools such as Eduaide

(eduaide.ai) which can function as a scaffolding technique for teacher candidates who are in the process of learning how to create, adapt, and customize instructional materials, curriculum, lesson plans, assessments, and activities. By incorporating AI tools like Eduaide into their teaching practices, teacher candidates can transform how they allocate their planning time. Instead of spending hours on repetitive lesson planning, they can utilize AI to redefine how they plan curriculum, allowing opportunities to shift their focus towards developing stronger connections and relationships with their students.

In addition to specific experiences related to curriculum planning tools, integrating experiences with interactive systems such as ChatGPT will create opportunities for teacher candidates to redefine and refine their skills in asking critical and carefully crafted questions. The purpose of the ChatGPT language model is to create text that closely resembles content written by humans (Mhlanga, 2023). Educators who utilize text generators should spend time teaching students about best practices for asking questions and crafting prompts to fully utilize the potential of AI assistance. The President and Fellows of Harvard University (2023) urge students to review the university's guidelines before using an AI tool and to be aware of the inaccuracy, bias, and offensive material that can be supplied by AI. Additional considerations for using AI include but are not limited to being specific with the prompt given, telling it how you want the output to be presented, correcting its mistakes and giving feedback, and asking it what else it needs from you to produce better outputs (2023). Any individual new to interacting with AI should spend time getting to know the algorithms, researching the metadata collected, reading the disclosure statements, and carefully considering the quality of questions asked.

Conclusion and Next Steps

The landscape of teacher education has evolved and now is the time for teacher educators to renew their dedication to lifelong learning. In recent years, artificial intelligence (AI) has emerged as a prominent global topic, dominating discussions and debates. AI is poised to revolutionize every facet of society, including education, but are we as teacher educators ready to launch our teacher candidates into success through the integration of AI in the classroom? Are we equipped to address the ethical dilemmas and considerations that will no doubt surround this integration? Are we ready to write and enforce policies and procedures regarding the use of AI in the classroom that protect students' data? Are we as teacher educators willing to grow in our learning, understanding, and flexibility as learners and leaders in the classroom?

According to Rinta-Kahila et al. (2023) there is a possibility that students using AI could potentially suffer with 'skill erosion'. Meaning that having a requisite knowledge and understanding of fundamental concepts, may take a back seat to being able to utilize AI technology. Wilson (2024) suggests that teachers 'safeguard' these general or critical skills such as problem solving, critical thinking, and creativity. As teacher educators, we should be diligent and mindful of these potential pitfalls and continue to stay abreast of the potential and the risks of AI.

Teacher educators should engage in continued professional development regarding the ethical and educationally defensible strategies for incorporating AI in the classroom. While this endeavor into the unknown is an exciting adventure, the truth is we do not know what the future holds for educators, students, or educational institutions. What we do know is that students today have access to powerful tools, tools that can be used ethically or unethically; tools that can undercut academic integrity or scaffold students' understandings. As teacher educators continue to explore the best practices related to the integration of AI in the classroom, they should engage

in healthy discussions and action research focused on preparing the next generation of teachers.

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Teach P.R.I.D.E. Academy: Preparing Teacher Candidates for Student Internships

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Abstract

Teach P.R.I.D.E. Academy (TPA) is a two-day training program that helps teacher candidates develop skills and strategies before starting their teaching careers in the classroom setting. The University of Arkansas at Pine Bluff School of Education has embraced the acronym P.R.I.D.E., representing Perseverance, Rapport, Integrity, Determination, and Equity. Each value is intended to guide and shape how future educators are trained; as a result, these dispositions encourage candidates to grow both professionally and personally. The academy covers teaching methods, classroom management techniques, lesson planning, and edTPA evaluation procedures while fostering a collaborative environment through partnerships with mentors and school officials. TPA provides targeted training sessions to build the confidence and competence needed for teachers to successfully navigate the challenges of the teaching profession. This article details the format of TPA and how it encourages mentor-student collaborations within the program while emphasizing the significance of career development in shaping competent and day-one-ready educators.

Keywords:
Assessment, classroom management, collaboration, Community of Practice (CoP), edTPA evaluation, educational mentorship, lesson planning, professional development, student internships, teacher candidates, teacher preparation programs

Introduction

Teach P.R.I.D.E. Academy (TPA) was conceptualized by Dr. Gelinda Machell Dailey, who recognized the need for a program that bridges the gap between classroom learning and hands-on teaching experience. Originally named the Aspiring Teacher Bootcamp, Dr. Dailey envisioned this program as a preparatory workshop to support students entering student teaching.TPA, launched in August 2024, helps teacher candidates connect what they learn in the classroom with real-world teaching experiences. It aims to make their transition smoother by providing practical training and support from mentors and assisting them in applying theoretical knowledge in their internships. Through TPA, participants can interact with educators and establish relationships with their mentors before starting their student teaching. Additionally, teacher candidates are provided significant professional guidance to support their journey toward becoming educators (Darling-Hammond et al., 2019).

Dr. Dailey conceptualized TPA and partnered with Dr. Stacy Luckett to plan and develop the program's first training session, which focused on comprehensive support for teacher candidates. Dr. Dailey also guided the development process by leading collaborative efforts with the faculty. Through her leadership and the collective input of the team, TPA was successfully implemented using the Community of Practice (CoP) theory, which builds confidence and competence among teacher candidates. CoP theory, developed by Etienne Wenger and Jean Lave, posits that learning is a social process where knowledge is constructed through collaboration and shared practices (Wenger & Lave, 1991). In this framework, teacher candidates engage in collaborative problem-solving and knowledge-building with their mentors, bridging the gap between theoretical knowledge and practical application in the classroom (Gijbels et al.,

2021).

Components of Training

Collaborative Teaching

At Teach P.R.I.D.E. Academy, co-teaching stands out as a cornerstone of professional growth, effective instruction, and collaboration in the classroom. This approach allows two educators to collaborate seamlessly, sharing responsibility for planning, instructing, and assessing students cohesively. Educators can improve how they connect with students and provide targeted support using models such as team teaching, one teach/one assist, and parallel teaching. This method strengthens the teachers' instructional practices and promotes an inclusive environment where students benefit from diverse perspectives and teaching techniques.

During the sessions, participants practice resolving real-life classroom situations through role-play. These activities help them learn how to manage responsibilities, plan lessons together, and make decisions collaboratively, improving their teamwork and classroom management skills. For example, candidates switch between being the lead teacher and a supporting teacher to ensure that both educators play valuable roles in teaching. The focus is on fostering communication and building trust as candidates learn the art of collaboration to deliver tailored instruction that caters to the needs of learners. After the session, participants learn specific methods to work effectively with another teacher (co-teaching) in the classroom. They also gain insight into how to deal with the everyday difficulties of teaching, like managing time, tasks, and students more effectively.

Studies indicate co-teaching optimizes students' performance by enabling support and varied teaching methods (Friend, 2019). During TPA, teacher candidates are given practical tools and strategies to use when teaching. These sessions also help develop their confidence, empowering them to be more capable of successfully applying these methods in different schools or classrooms.

edTPA Assessment

According to the National Education Association (2024), edTPA (Educator Teacher Performance Assessment) is an assessment and support system used by teacher preparation programs throughout the United States to emphasize, measure, and support all teachers' skills and knowledge to start their careers. Candidates undergo the edTPA process and are tasked with showcasing their skills in planning lessons and assessments and delivering instruction through a portfolio evaluation system. Teach P.R.I.D.E. Academy trains candidates preparing for edTPA by aligning their teaching methods with the assessment's defined standards and evaluation criteria.

During a session at TPA, candidates are guided through the details of the edTPA assessment process. Part of the focus is setting clear standards for lesson planning and using methods that engage students effectively and assess their progress meaningfully and accurately. This ensures that lessons are well-structured, students stay involved, and their performance is properly evaluated. Candidates practice creating lesson plans aligned with the criteria outlined in the edTPA rubrics and engage in activities to increase their ability to explain and defend their teaching choices. The session also features real-life examples of edTPA portfolios to demonstrate how critical thinking skills and evidence of student learning can be effectively incorporated into their submissions.

Furthermore, candidates work with mentors who offer guidance on practice teaching portions that adhere to the edTPA structure. This process helps candidates become better at

teaching, and demonstrate their competence in theory and practice. As self-reflection plays a role in edTPA, Teach Pride Academy demonstrates the significance of professional and personal growth, prompting candidates to incorporate input from mentors to elevate their teaching approaches.

By the conclusion of the TPA training, participants understand how edTPA is structured and become more confident in navigating the "commentaries" portion of the assessment. These commentaries require teacher candidates to reflect on and explain the rationale behind their teaching practices, lesson planning, and assessment decisions. Being more prepared in this process means they can articulate and defend their instructional choices, which is a crucial part of the edTPA evaluation. At the end of the training, the teacher candidates are equipped with hands-on skills and a habit of self-reflection.

Classroom Management

According to Harry Wong (2014), managing a classroom is frequently mentioned as a significant teaching component, "The biggest issue in the classroom is not discipline but the absence of procedures and routines." Charlotte Danielson's framework (2024) aligns with this view because it explores the importance of establishing routines and procedures to create effective and organized learning environments. Teach P.R.I.D.E. Academy equips teacher candidates with strategies to create a positive and engaging classroom by managing social interactions effectively and helping maintain a productive learning environment. The TPA session covers techniques for managing classrooms before the teacher candidate ever enters the room. There is a need for teacher candidates to be proactive instead of reactive. Putting guidelines for student behavior into place and creating routines are steps that help establish a positive classroom environment. During this session, participants work on designing management plans that focus on engaging students and promoting respect through encouraging behavior, clear communication of rules, and setting up classroom expectations.

In contrast, to maintain a peaceful classroom environment, reactive methods focus on addressing student misbehavior in a calm and organized manner. Training includes practicing responses to typical classroom issues, like lack of focus or student conflicts, through simulated scenarios. Through these drills, teacher candidates learn techniques to defuse conflicts, fairly deal with misconduct, and uphold student respect and confidence in circumstances.

TPA also encompasses the significance of fostering connections with students as an aspect of classroom management practices. Through forming positive relationships with students, teachers can cultivate an atmosphere where students are inclined to meet expectations and actively engage in their journey. Building strong relationships with students helps reduce behavior problems and creates a positive classroom environment. When students trust their teachers, they are more likely to follow classroom rules and procedures because they feel respected and understood (Danielson et al, 2024). This trust creates a positive and focused classroom environment where students are respectful and eager to learn.

Lesson Planning

Creating lesson plans is crucial for students to excel academically and professionally. TPA prepares teacher candidates with the tools and strategies to design organized lessons aligned with Arkansas educational standards. By planning lessons that meet various learning styles and abilities, teachers provide "*just right instruction"* with a blend of rigor and support for all students. TPA explores the importance of clear learning goals and measurable outcomes so that

lessons are focused and purposeful. Teacher candidates are better equipped to create engaging and effective lessons through this training.

Students are familiarized with the edTPA lesson plan, demonstrating the importance of teachers crafting lessons with defined learning goals and achievable results. They are taught how to create lessons that integrate differentiation to cater to students' ability levels so that each student is adequately challenged and assisted. This involves preparing teacher candidates to differentiate instruction for the varied learners they may encounter in their classroom. Formative assessment is key in these sessions as candidates learn to integrate assessments into their lesson plans and provide feedback on student progress. Additionally, edTPA allows teachers to adjust their instruction to address gaps in student understanding during learning activities. Throughout the training, presenters stress the significance of using assessment data to guide instructional choices, with candidates being taught how to modify lessons based on the performance of individual students and the class.

In addition, candidates work with mentors and fellow participants to create their lesson plans collaboratively. These joint sessions allow individuals to receive constructive feedback and broaden their skills in designing lessons that meet needs while catering to student requirements. Upon conclusion of TPA, candidates will depart with crafted lesson plans and the assurance that they will execute successfully in their teaching environments.

Data Collection and Assessment

The data for evaluating the Teach P.R.I.D.E. Academy (TPA) was gathered through post-session surveys administered to diverse participants, including teacher candidates, mentors, and faculty from the School of Education. While keeping the participants' identities private, surveys were conducted using online forms and in-person feedback sessions to gather comprehensive and candid responses. The survey combined quantitative and qualitative question types, with Likert-scale questions assessing overall satisfaction, content relevance, and confidence gained in classroom management and lesson planning.

Qualitative data was also captured through open-ended questions and allowed participants to provide detailed feedback on specific program elements. For instance, one participant shared, "The mentorship aspect of TPA was invaluable; it gave me practical insights that go beyond classroom theory." Another remarked on co-teaching strategies, noting, "Practicing role-switching during co-teaching sessions helped me see the value of flexibility and collaboration in a real classroom setting." This qualitative feedback, especially regarding mentorship and collaborative teaching, highlighted the program's effectiveness in building practical skills and confidence among teacher candidates.

In the survey data breakdown by categories, 60 percent of participants were educators who teach or will teach Kindergarten (K) through 6th grade. Another 20 percent were music education majors and music teachers who teach or will teach students from Kindergarten through 12th grade. Ten percent of the participants were teachers or teacher candidates who teach or will teach science in grades 7 through 12. An additional 10 percent were art teachers or teacher candidates who teach or will teach students in Kindergarten through 12th-grade programs. Overall, the survey results showed that 95 percent of participants rated their experience at Teach P.R.I.D.E. Academy as "excellent," depicting a strong positive response across different teaching specialties.

Figure 1

Teach P.R.I.D.E. Academy: Educator Categories Breakdown

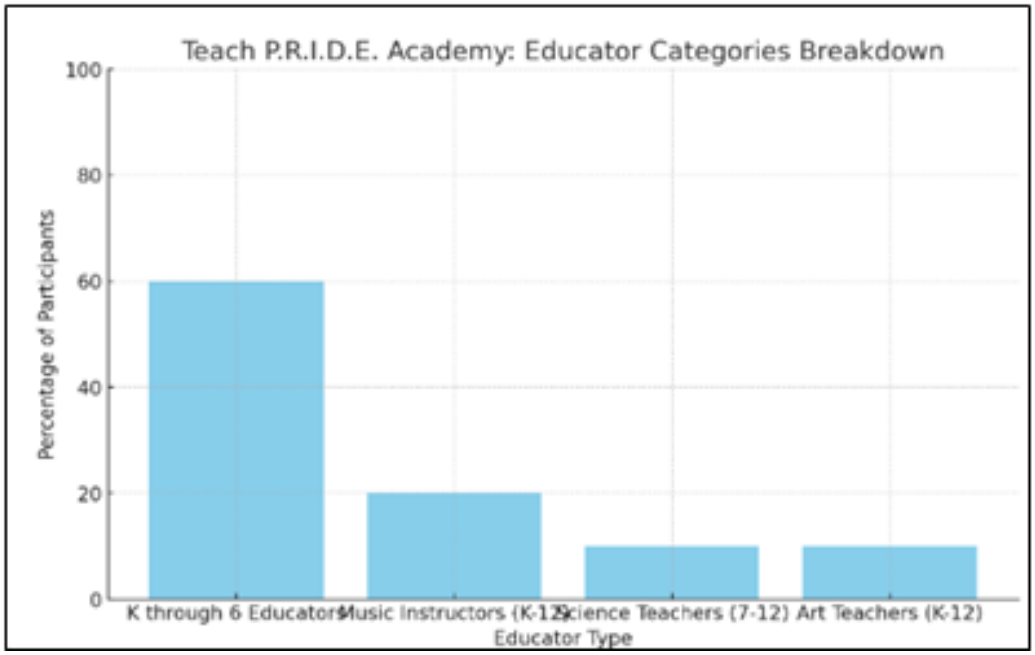


Figure 2

Teach P.R.I.D.E. Academy: Overall Experience Rating

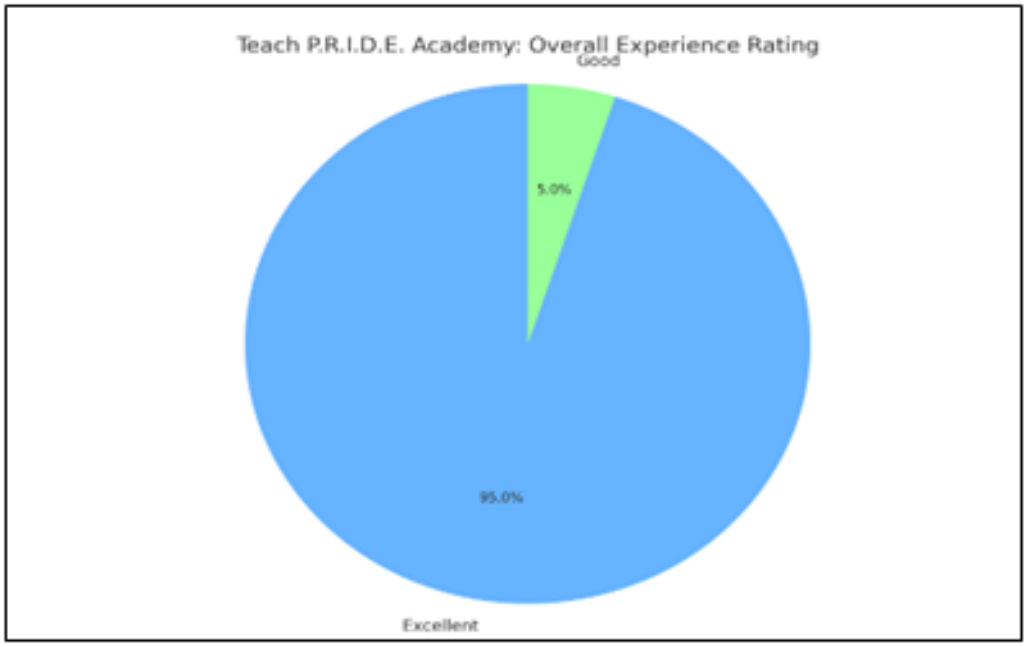
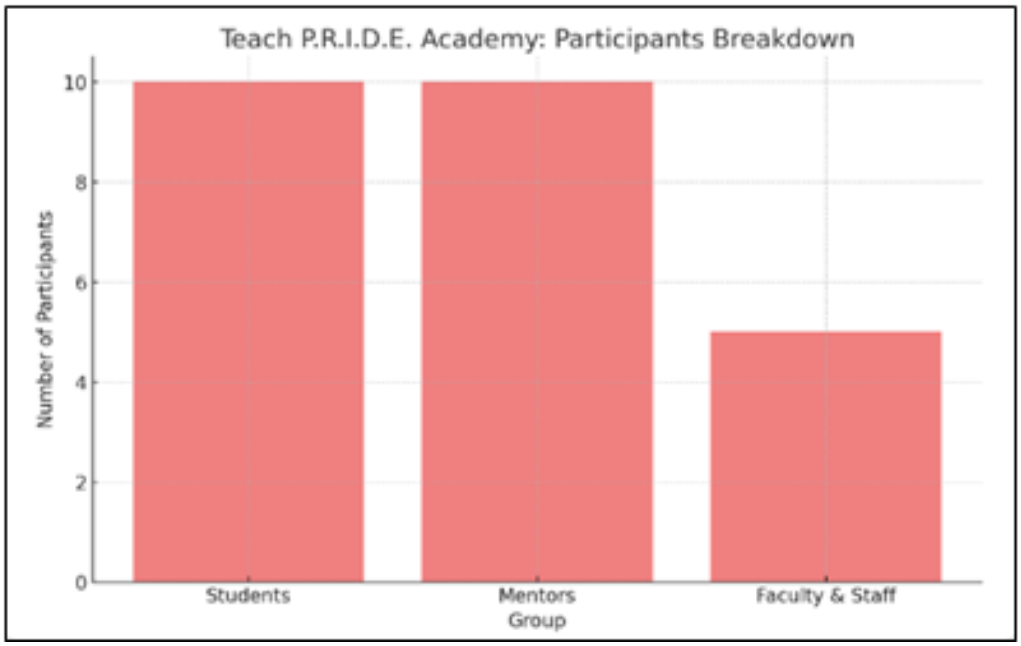


Figure 3

Teach P.R.I.D.E. Academy: Participants Breakdown



Teacher candidates praised the training sessions and noted the value of mentor connections formed during the program. These connections fostered a learning environment that was supportive across a variety of teaching fields. Elementary school teachers appreciated the focus on classroom management; some noted it may be a struggle for a novice teacher. Music and Art instructors valued teamwork in lesson planning, making it adaptable to their creative subjects. In addition, the mentors expressed satisfaction with the program; they mentioned that it helped them build strong connections with their mentees and offered beneficial career development opportunities. Faculty and staff also shared sentiments by expressing the significance of the partnership between the university and district collaborators to improve teacher training efforts.

Literature Alignment

The results of Teach P.R.I.D.E. Academy closely align with the principles of the Community of Practice (CoP) model, as established by Etienne Wenger and Jean Lave (1991). CoP theory emphasizes learning as a collaborative process strengthened through shared practices and collective problem-solving. By pairing teacher candidates with mentors, TPA facilitates an environment where candidates gain real-time feedback and practical guidance, bridging the gap between theory and classroom application. This approach reflects the CoP model's "legitimate peripheral participation" concept, where learners initially observe and then gradually take on more complex tasks through guided mentorship.

The program's structure also resonates with other research on mentorship in teacher preparation. For example, Grossman et al. (2021) discuss the importance of early mentorship, which helps teacher candidates build confidence and skills by providing consistent, structured support from experienced educators. Similar to TPA's design, Grossman et al. contend that strong mentor-candidate interactions are crucial for reducing feelings of isolation and fostering professional growth. Additionally, TPA's emphasis on co-teaching strategies aligns with findings

by Friend (2019), who notes that co-teaching promotes instructional diversity and adaptability, preparing teachers to address varied learning needs effectively. By simulating co-teaching in TPA sessions, candidates develop the flexibility and collaborative skills that Friend identifies as essential for effective classroom management. Additionally, classroom management training, inspired by Wong's (2014) work, reveals proactive strategies such as establishing routines and clear expectations- approaches that research has shown to create productive and positive classroom environments (Wong & Wong, 2014) Similarly, Danielson et al. (2024) affirm the crucial role of routines and procedures in creating effective classrooms. Through integrating these research-backed methods, TPA demonstrates an effective blend of CoP principles and contemporary mentorship practices, equipping teacher candidates to navigate the demands of today's diverse educational environments with confidence and competence.

Summary

Teach P.R.I.D.E. Academy (TPA) is an innovative program that connects what teachers learn academically with the skills they will need in real classrooms. TPA focuses on key areas such as teaching methods, organizing classrooms, preparing lessons effectively, and educating candidates for the edTPA evaluation. The goal is to follow best practices in teacher training, giving future educators both the practical skills and professional mindset necessary to thrive in today's rapidly changing educational environment. TPA's preparation lays the foundation for skill-building that provides a community of support and collaboration while connecting teacher candidates with mentors, university faculty, and district leaders who contribute to their growth.

The effectiveness of TPA is evident not only in the favorable feedback from participants but also in its capacity to cultivate valuable connections among university staff members, mentors, and district leaders. These bonds play a role in establishing a community beyond the initial gathering by granting teacher candidates ongoing opportunities to seek advice from seasoned educators during their internship and early teaching endeavors. By fostering a community spirit among shared stakeholders, there is also a focus on advancing the career development of mentees and mentors. This approach nurtures a culture of teamwork dedicated to a mutual commitment to student achievement.

Moreover, by focusing on practical skills like managing classrooms, working with colleagues, and creating lessons that meet the diverse needs of students, participants are better prepared for their teaching internships and more capable of addressing the challenges of today's classrooms. Integrating practices during edTPA readiness fosters the practice of thoughtfully evaluating their teaching strategies and implementing evidence-based approaches to improve student results. Engaging in this method is crucial for nurturing growth and flexibility in an ever-evolving educational setting. This approach provides teacher candidates with essential teaching skills and encourages a habit of continuous reflection for improvement.

In the future, the Teach P.R.I.D.E. Academy could set an example for teacher training programs that follow the Community of Practice theory. TPA tackles several hurdles that novice teachers encounter when starting their careers by focusing on support and delivering training. The academic approach of combining theory with hands-on experience, along with its emphasis on mentorship and fostering a sense of community, presents a blueprint that other educational establishments could imitate to equip their teacher candidates for the challenges of teaching. Building on this model, Educational Leadership programs can integrate the Teach Pride Academy approach and Community of Practice Theory to create collaborative learning environments. The strategy promotes shared problem-solving, mentorship, and practical training

to help future leaders develop the skills needed for today's diverse educational settings.

Teach P.R.I.D.E. Academy (TPA) exemplifies an innovative approach to bridging the gap between theoretical knowledge and practical teaching skills. Focusing on key areas such as co-teaching, edTPA alignment, classroom management, and lesson planning, TPA prepares teacher candidates to enter their internships with a strong foundation in pedagogy and hands-on strategies. Each training component builds the confidence, collaboration skills, and adaptability necessary for success in diverse educational environments.

The program's focus on mentor partnerships and real-world applications addresses practical gaps commonly faced in teacher preparation programs, specifically by equipping candidates with immediate application and professional growth tools. Feedback from participants has indicated significant gains in readiness, confidence, and teaching competence, particularly in areas like collaborative teaching and proactive classroom management. Furthermore, TPA's outcomes align closely with existing literature expressing the importance of structured mentorship, reflective practice, and differentiated instruction as critical to successful teacher training.

Teach P.R.I.D.E. Academy takes a thorough approach to teacher training and builds a strong sense of community. It prepares educators to meet diverse student needs and to make lasting contributions in education. Teacher-student mentorship is at the heart of TPA and experienced mentors guide candidates by sharing insights from real classroom experience. They bridge the gap between theory and practice and create a safe and open space for dialogue. Candidates discuss challenges, receive feedback, and build confidence in their skills. TPA prepares new teachers for day-one effectiveness and provides a lasting network for their growth.

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