

**CITE**

*Critical Issues in Teacher Education*

**Critical  
Issues in  
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# CRITICAL ISSUES IN TEACHER EDUCATION

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# "We're not going to give our lives": Pandemic Emotions and Selves

by

Meghan A. Kessler and Alexis L. Jones

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## Abstract

*In this article, the authors provide the results of a fall 2020 qualitative investigation of the impact of COVID-19 on the lives of K-12 educators in three midwestern U.S. school districts. We endeavored to answer the following question: How has the COVID-19 pandemic impacted the lives of teachers? We first situate this question in the current theoretical literature on teachers' identity, emotions, and care for students. Teachers often contextualized these concerns concerning their identities when discussing emotional tensions or strong emotions. This was often expressed in the following narrative pattern: "I have always been a teacher who \_\_\_\_, but since the pandemic \_\_\_\_, so now I feel \_\_\_\_." The teachers most often expressed fear, worry, guilt, sadness, and anger, and a tendency to engage in reappraisal or the symbolic application of a silver lining.*

"After months of teaching during a global pandemic, Wade Buckman felt worn out physically, mentally, and emotionally" (Will, 2021, para. 1). The COVID-19 pandemic caused extreme school disruptions and, therefore, disruptions in the lives and emotions of teachers. With this in mind, we conducted a qualitative investigation during the fall 2020 semester to bring to light teachers' concerns during the COVID-19 pandemic. We sought to answer the following questions: How has the COVID-19 pandemic impacted the lives of teachers? In this article, we first situate these questions within relevant theory and literature. Then, we share our research methods and procedures before sharing findings and closing with a discussion and implications for teacher education.

## Literature and Theory: Teacher Emotions, Selves, and the Workplace

Research on the impacts of the pandemic on teachers is still emerging (e.g., Collie, 2021; Hascher et al., 2021; Jones & Kessler, 2020; Pöysä et al., 2021; Sokal et al., 2020), but previous research on the effects of national emergencies on teachers has found that they cause long-standing effects. As one example, "Long and Wong [2012] found occurrences of stress, post-traumatic stress, depression, and anxiety amongst the 76 teachers who had 'put aside their grief' (p. 244) and carried on with their duties" (O'Toole & Friesen, 2016, p. 58) in Chinese schools following a magnitude eight earthquake in 2008. The study discussed in this paper explores the impacts of an unfolding global emergency, informed by research on teachers' emotions, care, and identity. We consider the intersections of these bodies of literature as representing essential aspects of the lives of teachers.

Emotional labor, when your job requires you to express certain emotions and hide others, involves "sustain[ing] the outward countenance that produces the proper state of mind in others--in this case, the sense of being cared for in a convivial and safe place" (Hochschild, 2012, p. 7). Perhaps one of the emotions or enactments of emotion most readily associated with teaching is that of caring.

Caring for students is an assumption in teaching, but, like emotional labor, it could be better emphasized in teacher preparation programs, inservice teacher education, and school culture. Noddings (2005, 2013) described care as a relation; one does not complete a caring act; instead, caring happens when the one-caring turns their full attention toward the cared-for. Also required for relational caring is a

confirming response from the cared-for--a smile, a comment, anything that shows the one-caring their behavior and attention have been interpreted as care will complete this relational caring cycle. From this perspective, teachers' emotional experiences are inextricably linked to their work and student relationships.

Campbell (2006, 2011) has written extensively on the topic she calls "ethical knowledge," the way teachers acknowledge their role as individuals in an inherently moral profession. "As a kind of virtue-in-action, ethical knowledge enables teachers to make conceptual and practical links between core moral and ethical values such as honesty, compassion, fairness, and respect for others and their own daily choices and actions" (Campbell, 2006, p. 33). Campbell sees this knowledge as an essential part of teacher education programs, as the interactional nature of teaching requires a moral awareness of things like care and respect for students. Rogers and Webb (1991) also conceptualized care as an essential part of teacher education. Real caring goes beyond affection. Teachers cannot fulfill all the needs of all students, but schools can help most children learn how to care and how to be cared for. Nevertheless, teachers' capacities to care for students were disrupted during the early months of the pandemic, interrupting an emotionally and professionally significant aspect of teaching.

Teacher well-being is also a complicated topic, but one conclusion that can be drawn from the literature is that teachers' well-being can be both positively and negatively impacted by their professional lives. Stressful situations on the job can create a situation where it is difficult for teachers to support their well-being yet feel engaged in their work. This tension can create stress, resulting in negative emotional states. However, we would argue that teachers' emotional well-being is an end in and of itself, not merely a condition needed to support student learning. During the rapid switch worldwide to fully remote or hybrid learning, teachers were under enormous stress, threatening their well-being:

UNESCO (2021) has stated that confusion and stress for teachers was one of the adverse consequences of school closures. Recent findings support this view, such as MacIntyre et al. (2020), who found that teachers experienced substantial levels of stress during school closures (see also Salmela-Aro et al., 2020; Collie, 2021). Li et al. (2020) found that the prevalence of anxiety among teachers was almost three times more common during the COVID-19 pandemic than had been reported previously. (Pöysä et al., 2021, para. 11)

While it is true that some school conditions enhanced teachers' well-being during the first year of the pandemic, including autonomy-supportive leadership, defined as leadership that promotes teachers' empowerment (Ryan & Deci, 2017), this was likely not the case for every teacher. Further, these benefits quickly disintegrated. Without leadership of this kind to help teachers more confidently navigate workplace stresses, the adverse emotional effects of the pandemic were left to fester. However, the question may remain: Besides teacher emotional well-being as a fundamental goal, why should school leaders, teacher educators, and others care? The remaining two sections of this literature review address this question.

Research on teachers' emotions cannot be separated from the theoretical work on teacher identity. For instance, Nias (1996), who writes about the moral nature of teaching and teacher identity, described intrusions into professional experiences. COVID-19 can undoubtedly be considered an intrusion. When others (e.g., administrators, parents, a global pandemic) get in the way of relational work between teachers and students, teachers may feel anxious, depressed, and angry. Teachers tend to feel "positive" emotions when they can remain true to their

identities and achieve their goals; they feel “negative” emotions when they cannot do this.

Emotions, like identity, are shaped by several things, including the contexts in which teachers find themselves. People have ways of dealing with certain emotions they consider negative--they can reappraise them (i.e., reinterpret them in a way that focuses on a more positive impact of a negative event), distract themselves from them (e.g., going to a movie to avoid thinking about grading), or they can suppress them and try to eliminate the feeling(s) or their expression (Levine et al., 2012). Unfortunately, while a potential strategy for resilience, the reappraisal process could also enable unfavorable circumstances to continue, further eroding teachers' solid sense of agency in enacting their identity.

For instance, Zembylas (2003) and Haviland and Kahlbaugh (1993) suggest emotions hold a teacher's identity together. As described in a previous paper (Jones & Kessler, 2020), Zembylas describes teacher agency as the intersection of identity and emotion. “Teacher agency is contingent upon the cultural, historical, and policy dynamics in which a teacher is situated. The viability of teacher agency impacts teachers' capacity to enact their commitments and, therefore, feel that their identities are being realized” (Jones & Kessler, 2020, para. 33). The “storied landscapes” of teaching (Clandinin & Connelly, 1996) have changed dramatically, impacting policy decisions and in turn, teachers' work and their emotions and identities.

Finally, it is essential to attend to teachers' emotional experiences and professional identities -- both for their humanistic and practical/policy implications. Regarding the latter, under-supported, stressed, and “burned out” teachers are more likely to leave the profession earlier. For example, teachers who receive fast-track or alternative professional education (i.e., teachers who may have a lighter foundation and less support at the beginning of their careers) are more likely to turn over (Carver-Thomas & Darling-Hammond, 2017; Redding & Smith, 2016). Such preparation often accompanies other reforms, such as scripted curriculum and value-added evaluation models that depersonalize teaching, silence teachers' voices (Milner, 2013), and cause dissatisfaction.

This diminishment of teacher voice in reform, policy, or other institutional elements leads to frustration and demoralization among teachers (Santoro, 2018), meaning that the work and the core of teachers' moral commitments are threatened. This directly relates to theories on teacher care, emotion, and identity. Demoralizing reform trends, which can incite teacher turnover, are prevalent among teachers in under-resourced schools and communities of color (Carver-Thomas & Darling-Hammond, 2017; Simon & Moore Johnson, 2015). Further, professional support and working conditions generally matter greatly for teachers' job satisfaction, especially where students' needs and resources are low (Moore Johnson et al., 2012).

In summary, teachers are more likely to feel satisfied and stay in the classroom with the proper professional/developmental, environmental/structural, and affective/cultural support. Unfortunately, “teacher shortages” only worsened during the pandemic, exacerbating other indicators of teacher dissatisfaction, such as low numbers in teacher preparation programs and high reports of unsustainable workloads (Carver-Thomas et al., 2021). Since the pandemic fundamentally disrupted teachers' lives, teachers were left to pick up the pieces.

## Methods

Using qualitative methods, we collected an accounting of teachers' perspectives about their emotional experiences and selves during the COVID-19 era. We interviewed eight teachers from various teaching contexts to get an idea of how

these teachers were feeling about their districts’ return-to-school plans in the fall 2020 semester (late August to early December). These data represent a time when districts tried to discern how to balance academic and safety needs. We asked: How has the COVID-19 pandemic impacted the lives of teachers?

Participants were recruited using snowball sampling from three school districts in a large, midwestern U.S. state. Snowball sampling was initially chosen as the appropriate method for recruitment due to its ability to support marginalized individuals, particularly when exploring topics that may be sensitive (Woodley & Lockard, 2016). While the invitation to participate was extended to over 200 teachers, it went out at the beginning of an already stressful fall 2020 semester, and responses were understandably limited. Further, this limited response rate resulted in a participant pool entirely of teachers who identified as white. This is a limitation of our study.

Participant details are outlined in Table 1. All participants had been teaching for over 5 years, with several having more than 15. Each district defined remote versus hybrid similarly (i.e., entirely online versus offering part-time, in-person, and fully virtual student options). Race and sex demographics are self-identified, and all names are pseudonyms.

Table 1. Teacher Demographic Information

Pseudonym	District	Race	Gender	Teaching Area	Fall 2020 School Modality
“Jennifer”	District 2	White	F	Secondary Language Arts	Hybrid
“Madeline”	District 2	White	F	Secondary Language Arts	Hybrid
“Rachel”	District 2	White	F	Secondary Language Arts	Hybrid
“Nancy”	District 3	White	F	4th grade	Remote/ Hybrid
“Matt”	District 1	White	M	3rd grade	Remote
“Sarah”	District 3	White	F	Middle ELA	Remote/ Hybrid
“Deb”	District 1	White	F	Music	Remote
“Annie”	District 1	White	F	3rd grade	Remote

Forty to 60-minute interviews were scheduled during the fall 2020 semester. To accommodate teachers’ schedules and COVID-19 protocol, interviews were conducted over the phone or videoconference. We also engaged in member checking after the transcription of interviews.

The audio files of each interview were transcribed. We used open, descriptive, and thematic coding of the transcripts. We reviewed each transcript separately, noting what we understood each teacher saying. We discussed the



patterns and codes together, refining descriptive code definitions (emotion and identity) and checking each other's coded transcripts.

The relationship between emotions and identity is difficult (if not impossible) to tease apart (O'Connor, 2008). Further, the work of teachers has been significantly disrupted by the pandemic, carrying specific implications for the caring, emotionally laden role of educators and their sense of identity. After coding the transcripts for emotion and identity, we found a new pattern and refined codes for a second round of thematic coding. We also found after a more extended discussion of a negative experience, teachers reappraised the situation or put a positive spin on their experience. Therefore, reappraisal was added as a third theme for the second round of thematic coding. The initial descriptive codes for identity were not divided into thematic codes as they were not represented in as high a proportion as emotion.

#### Findings: Identity and Efficacy Tensions Caused by Pandemic Disruptions

During the fall 2020 semester, the teachers were coping with both the loss of what teaching was and the loss of who they were as teachers. Several shared that they cared as much or more about their students' holistic well-being as their academics. One participant said, "The most important thing is the connections and building them up as little, tiny humans -- to be good people" (Nancy). This emotion- and care-oriented teaching mattered before the pandemic and became even more critical after the virus outbreak:

I value relationships with kids. I think that has the biggest impact on them. I think that's the biggest--the only--way you're going to get them to do anything is by forming relationships with them. Forming a bond and letting them know that you care about them before you can teach them anything is key. . . . It just hurts me and them if I don't put their well-being first and foremost. (Annie)

Unfortunately, the pandemic was about to truncate teachers' ability to enact care toward this end.

The teachers in this study also described their commitments as components of their identities. They described teaching in warm emotional terms such as "passion," "care," and "love," each of which aligns with the concepts represented in the literature review above. However, this became a challenging aspect of teaching during the COVID-19 pandemic. The teachers were wondering what it meant to be a teacher and how to enact their identities when not able to engage with students face-to-face:

I went into the teaching profession because I love what I do. I absolutely love what I do. I love when you can teach something to a student, and the light bulb goes on, and they get it. I love that. And it's hard to see that on a computer [during virtual learning]. (Sarah)

Additionally, many questioned whether they could be effective without being able to build positive relationships with students.

My biggest concerns have to deal with question number three, really [the impact of the pandemic on my professional efficacy]. I mean, it's my sense of professional efficacy and making sure that I give kids a good education that matters most. I mean, I've read the research. I know that online learning isn't that great. I mean, not the best anyway. And that kills me a little bit inside, because I enjoy teaching and I enjoy the change that we make [in kids' lives] and I don't really see a way to do some of the things that I'd normally do, digitally. And a lot of that has to deal with the relationship piece. (Matt)

Further, teachers feared that their students' health, safety, and perhaps even lives were at risk during the pandemic. This challenged their most foundational

commitment: care for their students. As Matt said, school is intended to be a safe, nurturing place for kids, “A place where we don’t--we don’t harm kids. And that’s what we tell kids all the time: They’re safe here.”

For the teachers in this study, their role as teachers seemed grounded in the very core of their identities. Teaching was not just, as Dr. Jill Biden (2020) said, what they do, but who they are. Annie captured this sense of positionality well:

Well, this is probably where I’m going to cry. Just, you know, I’m just really hard on myself, you know, because you, um [long pause]. I’m sure that other people in other professions get their sense of identity from their job. You know, like, “I’m a doctor, what else can I do?” Well, this is what I do. And you know, I’m sure there are other professions [where this is the case], but being a teacher is so much of your identity. So, like, you want to be good at it!

Once the pandemic hit, teachers were thrust into a demanding process of reorganizing, revising, and redesigning who they were and what they did. Everything they had done with students in previous years -- cultivating relationships, designing curriculum, or conducting assessments was more complicated and layered on top of new work concerns and challenges.

When confronted with these identity and efficacy tensions, some teachers remained caught between who they saw themselves as and what was now expected of them. This prompted strong emotional responses and vivid descriptions of role shifts. Some teachers engaged in reappraisals, applying a silver lining to their experience to cope with a situation entirely out of their control. Others began to feel they had to reconceptualize how they saw themselves and their work with students.

When teachers discussed emotional tensions or strong emotions, they often contextualized them within identity. This was sometimes discussed directly and other times implicitly. The emotions most expressed by the teachers were fear, worry, guilt, anger, and sadness.

Teachers expressed fear that their loved ones or students would fall ill to the virus, that they simply weren’t teaching with efficacy, or they might be letting their students down when unable to be there physically to communicate care. For some teachers, fears about immediate physical and emotional safety, health, and even life-or-death questions were top of mind. For others, fears were more long-term. Teachers wondered what being fully online would eventually do to their and their students’ social-emotional well-being or physical health and cognitive processing.

Matt and Deb spoke most concretely about fears for their own/their family members’ health and safety and that of their students; both seemed equally important. For instance, Matt disclosed he had a compromised immune system and was unsure whether it would be safe for him to be in the school building before being vaccinated. Likewise, all three members of Deb’s family had complications related to pre-existing conditions. Their safety, at its most foundational level, was at risk.

All of us, no matter what -- all of us -- would like to be back in the classroom. But none of us signed up to be frontline workers. That’s not what the job entails, even though it has morphed into something like that. (Deb)

Yet, their identities were grounded in care for their students and a responsibility to provide safe learning environments. As Matt said, “I would quit teaching if a kid in my class died. I’ve never had a job that I love as much as teaching. But I would feel responsible.”

Teachers also expressed fear, worry, or guilt they would not be able to do their jobs well. Virtual learning was thrust onto teachers with little time to prepare or adapt.

I just feel bad. I mean, there's just, they're behind, and the resources are different; I can't just give them a book that's just right for them, you know? And their parents don't have access to them. And they're going from this place to this place, and the parents understandably get frustrated, you know, it's like, "What's this [assignment]? Or what's this platform?" (Annie)

Annie worried she was inadequately serving as a teacher, tech expert, and parent educator in one. She received little support for these additional roles. Further important to her identity was a commitment to the families and communities she served. Without the necessary interpersonal and technological tools, she worried they were letting everyone—including herself—down.

This related to a fear of falling short on responsibilities to care for students - the core of their teacher identities.

Because of the pandemic, I was scared to death about how I was going to make a connection with my students. In March, they were [already] my kids already for the whole school year. So, it was easy. But in August it was like, "Oh my gosh, how am I going to connect with a kid over the computer?" (Sarah)

Sarah's worries stemmed from a sense of duty to her students. This caused her to feel "stressed beyond words":

I strive to do the very best, and when kids leave [this town], I want them to look back and go, "Wow, I remember [her] class! I learned this, this and this!" I don't want them to be like, "Oh, that was like a," pardon my language, but, "that was a shitshow year." (Sarah)

Although drawing strict distinctions between expressions of worry, fear, and guilt is difficult, each was connected to our participant teachers' identities. However, besides individual coping strategies, few supports were added to help teachers navigate these new shifts in expectations.

#### Anger and Sadness: Mourning the Losses of Self and Situation

Teachers also expressed anger and sadness at the situation they had been placed in by their districts, the state legislature, or COVID-19 in general. New to her school, Rachel commented that she and her students could not always see each other's faces due to masking. She was sad that relationship building, an aspect of teaching she repeatedly expressed was essential, could not occur when faces were covered with masks. The quote below follows the narrative pattern identified in our analysis, indicating an identity tension:

And so, it was just sad for me. I loved my students at [former district], so it was hard leaving and not being able to even hug them or say goodbye and all my seniors not being able to have that closure. It's really, really hard for the students and for us. (Rachel)

Rachel described herself as "everybody's friend and mom and teacher all in one." She was also saddened that her relationships, a foundational element of teaching, were interrupted by shelter-in-place orders. Annie had similar feelings but felt pressure to continue with her academic goals. "I still have that internal feeling that I want them to make a year's worth of growth, or more. That doesn't go away at all. So that pressure—that's what's making everybody cry." (Annie)

Sarah also expressed sadness at the loss of comfort in her abilities. Recently, she called the teacher's retirement office to ask how long until she could retire, saying, "I don't know if I can pull this off and be a good teacher for my kids" (Sarah). Several teachers used the word "inadequate" to describe their sadness during this time, and Matt's position as union leader required him to shoulder these pressures. "I think I've had five calls this morning before I talked to you, teachers just crying. They're like, I can't do it. I don't know. They don't know where to go." (Matt)

Madeline expressed well-placed anger during her interview. When asked about her well-being, she quickly stated this was of little concern to her; she was far more worried about her students than herself. What made her angry was how politicized the conversations surrounding the reopening of schools had become:

And we went back to school because we had parents and the districts do with throwing up that, you know, it's the squeaky wheel that gets the oil. I mean, we would not have come back to school if it wasn't for the outrage of our community. And this even goes back to student, to teacher well-being. We all felt like people cared more about having a babysitter than they did about teachers' well-being or even other students' well-being. (Madeline)

Deb would have agreed with Madeline's concerns about politicization. Teachers got angry when those outside the profession made decisions without teachers' voices being meaningfully included. Further, some of the narratives about reopening schools blamed teachers for not wanting to return (Myer, 2020). Deb countered the complaint teachers were getting paid for parents' work:

I wish that policymakers knew and the folks who implement these accountability things, it's like, being at home, working from home, not having standardized tests last year... Um, none of it changed the fact that most of us worked our asses off. (Deb)

Similarly, Nancy felt some saw schooling as childcare, which was problematic. "A common response parents have given to many teachers regarding school opening is, 'What am I going to do with my child? I work outside the home.'" Nancy was angry that this relegated teachers to the role of babysitter, diminishing teachers' professional skills, knowledge, and expertise. There was real anger that members of their community simply did not appreciate teachers' work. Similarly, Sarah commented:

My role and identity as a teacher has morphed into a new uncharted territory for me because on the fly I've needed to become tech savvy without any prior training. And I not only had to facilitate remote learning, but I had to now change my whole way of teaching to a lecture style, which I hate. (Sarah)

**Emotional Reappraisal: Attempting to Reframe and Preserve Teacher Selves**

Interestingly, teachers often expressed a "however" after sharing difficult emotions. Many were afraid of sounding "too negative" or wanted to find a silver lining. This can be described as emotional reappraisal. Some said they were becoming skilled in some way. Others commented they and their colleagues were being more compassionate. Sarah remarked:

The sense of teacher comradery in creating a database of different kinds of technology, things have come out of these talks that we've had. So even though it started out with me feeling inadequate, now I'm feeling like everyone's sharing what they're doing, more than before. (Sarah)

Sarah commented on how "you're never too old to learn new things" and how resilient she had become. In a sense, the narrative frame we have mentioned was now turning into something like, *I have always been a teacher who X, but since the pandemic Y, so now I feel Z, and that's good because I can now add A, B, and C to my teaching repertoire and identity.*

For Annie and Matt, reappraisal meant reframing experience as something no one controlled. Matt communicated the importance of practicing what he preached to his students, so to speak, about maintaining a resilient, growth-oriented perspective. And that involved a level of acceptance of uncertainty.

So, right now I'm working on just dealing with the things that I know I can change or can do something about. ... I think that the thing we all learned

was that there's never any guarantee that we're going to have a normal year. I'm going to just do everything I can do. And if I can't control it, then I'm going to let it go. (Matt)

Matt said he had learned as a child, focusing on the things that were within his control was important for remaining resilient in the face of the uncertainties and challenges of pandemic teaching.

### Discussion and Implications

When conducting her interview, we asked Madeline how COVID-19 impacted teachers' well-being. She responded quickly, "I don't have time to think of that. Other people have it so much worse. It's more important to think about theirs." The layered disruptions and challenges associated with the pandemic are at the heart of the difficulties facing teachers. The teachers' emotional experiences of guilt, fear, worry, sadness, and anger were often evidence of fraught identity tensions. Our analysis found these identity tensions and emotions were related to teachers' capacity to build and sustain positive and caring relationships with students, perform the foundational work of educating students as whole individuals, and maintain their own or their families' physical health and safety as well as mental and emotional resilience for themselves. The teachers in this study felt isolated, underappreciated, misunderstood, and fearful.

Given the limitations and focus of this study, primarily sample size and constitution, there is much more to be considered. One theme requiring more distinct attention is the perspectives of historically marginalized teachers. The teachers who participated in this study were white, mostly women, and did not discuss racial or gendered aspects of identity explicitly in their interviews, except to say they were particularly aware of the impact the pandemic would have on their students of color. Knowing just how severely the pandemic has impacted BIPOC communities, more research should be done to understand pandemic teaching and intersectional identities.

Similarly, we note some teachers' tendencies to reappraise their experiences, perhaps evidencing gendered teaching expectations. Further, while emotions of fear, worry, guilt, anger, and sadness are, indeed, simply evidence of the hardships of pandemic teaching, they also may speak to the lack of voice or agency teachers felt during this time. Again, these troubling continuations of pre-pandemic dynamics deserve their own analysis.

#### Emphasizing Teacher Well-being in Teacher Education

Despite these limitations, this study illustrates how the pandemic brought to light the deep connections between teachers' emotional experiences and identities and the importance of investing in teachers' resilience and workplace satisfaction. Therefore, teachers' emotional well-being, which our analysis found to be closely linked to their capacity to enact their identities in value-aligned ways, should be a goal for teacher educators, school leaders, policymakers, and other stakeholders, not simply a means to an academic or economic end. These findings will be significant far beyond the COVID era because they highlight inequities and troubling workplace conditions already present and unaddressed in U.S. schooling.

What does this all mean for teacher educators who may not always be able to impact the day-to-day realities of teachers' lives? Perhaps we can look to other trends in education for guidance. Specifically, over the last several decades, schools have grown considerably in their capacity to support the "whole" PK-12 student, leveraging structures such as multi-tiered systems of support, trauma-responsive methods, and other tools to address the academic, social-emotional, and physical needs of students. These efforts will be even more critical in the months to come.

Yet, our study found that students' needs weigh heavily on teachers' emotions and identity efficacy.

As our data demonstrates, the early months of the pandemic incited unprecedented isolation and emotional distress in teachers. Many of these realities have continued or worsened as new phases of the pandemic have progressed. Further, most of our participants were left alone to navigate these new professional roles and expectations. Therefore, we take our findings as a call for teacher education to address teachers' emotional and professional well-being better.

This would first require institutional or systemic changes in how we support the construction of workplace culture and environment, professional learning, and retention. This includes attending to faculty/staff mental health and well-being as built-in aspects of professional learning, administrator training, and workplace expectations. Teachers' unions often represent a strong voice for the profession on these matters--including calls for safer working conditions during the pandemic (e.g., Swartz, 2021). Yet, our findings show that even more responsibility should be taken on institutional levels. Schools themselves need to consider how systems of support can be integrated to care for and reinforce teachers' professional and individual well-being.

Therefore, teacher educators who interact with or educate administrators or school leaders, community stakeholders, and policymakers should take it upon themselves to inform these constituencies about the detrimental effects of an institutional or systemic culture that disregards teacher well-being. However, schools themselves (and their leadership teams) are already overburdened. Therefore, to imply that this is merely an administrative or district/building-level responsibility is to downplay the complex web of stakeholders and institutional structures that constitute a school culture.

Our findings also demonstrate how pandemic-induced emotional distress caused tension in their understanding of their own teacher identities and sense of efficacy concerning those identities. Therefore, we assert that teacher education programs and curricula should address the presence of teacher identities and emotions. A question to consider here is: How can teacher education support and sustain teacher well-being and identity articulation or development? Most recently, workplace stressors or challenges have been addressed through calls for teacher "self-care" without sufficient attention to the broader, more significant systemic issues (Slade, 2021) that have facilitated our study's distressing emotional experiences and identity tensions. Therefore, new teachers should be better equipped with theoretical understandings and practical tools for identifying, analyzing, and responding to the many emotional tensions accompanying their day-to-day work and long-term identity development. Teacher educators should be thoughtful about how their work goes well beyond the technical "training" or "production" of teachers. Instead, they may consider how they assist in "growing" teachers who may be rooted in the profession for many years to come.

### Conclusion

Since we began writing this article, the COVID-19 pandemic has continually evolved, bringing numerous concerns concerning variants, vaccines, treatments, growing social divisions, deepening teacher dissatisfaction, and school personnel shortages. For several years, teachers and other school staff have often put aside their concerns to provide their students with the best possible educational environment. This has continued despite few additional resources. Yet, as this study demonstrates, asking teachers to ignore their emotions and teach is not realistic.

As professionals at the heart of systems and institutions often under-resourced while serving students with increasing vulnerabilities and needs, teachers are now, more than ever, going above and beyond what they were initially prepared to do. The pandemic will continue to impact teachers in a manner that influences their sense of professional identity and emotional well-being, perhaps even their ability to remain in the profession. Teachers have shouldered the weight of the pandemic in a very distinct, even troubling, way, and now is the time for teacher educators to support them and mitigate these challenges.

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# Principal's Actions to Retain Teachers

by

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## Abstract

*This study examined the actions principals take to retain teachers in their schools and the barriers they face in retention. Principals expressed the strategies they use to retain teachers in a 10-question open-ended survey. The study found Principals felt that building relationships with teachers and supporting their needs at the building level, greatly assists in retention. In creating this positive culture in the school, teachers feel a part of a family or a team. Principals wished that constituents outside of the school building, district offices, boards, and parents could be very helpful by supporting teachers in their policies and actions. Principals expressed that if each group of stakeholders were thoughtful in their requests, it would benefit their work in retaining teachers. Lastly, Principals expressed a need for teachers to have protected time for lesson planning and preparation work away from students.*

There currently is a teacher shortage and a lack of prospective teachers entering the field. This is causing stress on the education system. It is a critical need that we retain the teachers that we do have in the classroom. This problem is multi-faceted. Fewer students are majoring in teaching. "Between the 2008-09 and the 2018-19 academic years, the number of people completing a teacher-education program declined by almost a third" (Will, 2022, online). With a lower number of licensed teachers entering the field, it becomes vital that we retain the teachers we have. This study examined three factors: 1) What are the barriers that principals face in retaining teachers? 2) What are principals doing to retain teachers currently? 3) What can colleges of education do to help principals in this effort?

## Review of Literature

Teacher attrition, or the rate at which teachers leave the profession, has been steadily increasing, especially among new teachers. They are more likely to quit within their first five years of teaching. According to the U.S. Department of Education (2017), about 8 percent of public school teachers left the profession in 2012-2013, and about 44 percent of those who left, did so within their first three years of teaching.

At the start of the school year, positions in the nation's schools remained unfilled. The positions that are filled are not necessarily filled with licensed teachers. Fewer licensed teachers are graduating. In addition, licensed, working teachers are leaving earlier than in previous years (Jacksonville Public Education Fund, 2021). Rural districts struggle to retain teachers more than Urban districts (Kaden et al., 2016). Due to these factors, some positions are filled with long-term substitutes, unlicensed teachers, and teachers with alternate certifications. Thus, the experience of teaching and learning in the classroom can be varied.

Replacing teachers annually is expensive for school districts. The National Commission on Teaching and America's Future (2007) found teacher turnover is costly as new teachers must be hired and inducted into the district. Districts must examine why teachers are leaving and what they can do to solve those issues. The cost has not lessened since this study was conducted. Effective teachers are the number one contributor to student success (Masri, 2020). When schools have high teacher turnover, teachers do not have the opportunity to build relationships and

work together on school and student needs and goals as the teacher/collaborator may or may not be there the following year (Fusco, 2017). Nationwide over half of the teachers in the profession leave before retirement age (Sutcher et al., 2016).

Teacher attrition negatively impacts students. The revolving door at the school, and the loss of experienced teachers, disrupt the quality of instruction and the relationships that teachers have with students. The stability that students need to reach full achievement and potential is not present at all schools (Carver-Thomas and Darling-Hammond, 2017; Ronfeldt et al., 2013). The schools that are most affected by attrition are schools with students who have financial barriers, are students of color, have a high proportion of English Language Learners, and have a higher number of students with disabilities (Carver-Thomas and Darling-Hammond, 2017; Ingersoll et al., 2014). Schools with a larger proportion of high-needs students are highly impacted. Unfortunately, these are the very schools that need consistent, quality teachers. Losing teachers negatively affects the goal of having high-achieving schools and high-achieving students (Carver-Thomas and Darling-Hammond, 2017; Ingersoll et al., 2014; Ronfeldt et al., 2013).

The reasons for teacher attrition are multilayered, but some of the most common reasons teachers give for leaving are low salaries, poor working conditions, lack of administrative support, high-stakes accountability, insufficient professional development, and inadequate preparation (Albert, 2017; Carver-Thomas and Darling-Hammond, 2017; Ingersoll et al., 2014; Ronfeldt et al., 2013). Improving communication between administrators, teachers, parents, and the programs that prepare teachers would work toward the goal of retention (Kaden et al., 2016). Principals can help struggling teachers with support, encouragement, and professional development to strategically address problems of practice. If the teacher is receiving threats of termination and evaluations do not give helpful advice for improving performance, then it is more likely that they will leave. Evaluation and improvement plans are important for improving teacher quality, but also retention (Dee et al., 2021).

Principals are important in the teacher retention process. One issue that influences teacher retention is the role of school principals in teacher's daily work and the support they provide for teachers. School principals are not only the educational leaders in the school but also the business managers making financial decisions. The dual role that a principal plays influences the focus of instruction, school and classroom climate, and both student and teacher performance. In their role, they can help teacher retention by having a vision for the school and then influencing working conditions, teacher and student expectations, learning opportunities, and relationships between teachers and students in the building (Carver-Thomas and Darling-Hammond, 2017; Koerber et al., 2023; Ladd and Sorensen, 2017).

Principals themselves need support so that they can help teachers in their buildings. How do principals navigate keeping teachers in systems they do not fully control? The reasons that teachers leave may not be in the school house but in the county office or the school board (Starr, 2017). Teacher attrition is not the only issue. One out of five principals leave each year. With such high leadership turnover, the teachers' ability to build relationships with their school leaders and have consistency in leadership is difficult, which can also lead to teachers leaving the profession (DeMatthews et al., 2022).

## Methods

Principals in one district were contacted once the district office approved the research project. There were approximately 40 schools in the district. A Google

form was sent through email to each principal. The survey contained ten open-response questions. The first was a clarifying question of district and grade level. The questions asked were:

1. Please tell us your district and level of school (elementary, middle, high, etc.) in which you are a principal. Do not include your name or your school's name.
2. Have you had issues with teacher retention or shortage at your school? Tell us why or why not?
3. What are the hurdles you face in the retention of qualified teachers?
4. In what ways have you overcome barriers?
5. What are you doing to make teachers want to stay in teaching?
6. What influence does your county office or school board have over retention?
7. If you could give advice to a new principal about how to retain teachers, what would you tell them?
8. What do you wish you could do that you currently cannot?
9. Can you think of any way that institutions of higher education can help you retain teachers?
10. Thank you for taking our survey. Please feel free to add any last thoughts about teacher retention that you think we missed in our survey.

The responses to questions were examined as a case. The case is bound by school principals in one county in one Southeastern state in the United States. A bound study is how the study sets limits. For example, the period it occurred would be one way a study is bound. In this case, the study is bound to principals in one state district in the Southeastern United States (Yin, 2014).

In examining the case, each researcher separately read the answers. They identified themes between the results of the survey. Then the researchers met and discussed the themes and decided on a key set of themes. They then negotiated what were the best examples of themes. This is the nature of qualitative research. This method uses a variety of techniques that describe and translate information that explores naturally occurring phenomena or problems. A qualitative researcher understands that the problem or issue under study is emergent. Researchers must be flexible and respond to changes that occur as the study progresses and consider their positionality in that phenomenon (Merriam and Tisdell, 2016). The researchers in this case are a principal educator and a teacher educator in a college of education.

## Results

Of the 40 schools contacted, seventeen principals responded to the survey. The results were defined by question. The survey was sent to one district. Since this was an initial study only one district was surveyed, thus question one was not a part of the analysis. It is hoped that at a later date, the counties through the state will participate.

Question Two: Have you experienced either teacher shortages or issues with retaining teachers at your school? Why or why not?

Response of Participants:

- Seven of the 17 respondents indicated they did not have retention issues. One principal reported that he or she did see a decline in qualified applicants applying for positions. reported that he or she did see a decline in qualified applicants applying for positions. Others noted that if they did

have a shortage, it was in a specific area such as special education or science.

- Ten of the 17 respondents indicated they did have problems with retention. There were issues with filling long-term absences with qualified teachers. Specifically, principals reported difficulties with hiring for math and science content areas due to a shortage of highly qualified candidates. Others reported that being in a rural school impacted their success in hiring.

Question Three: What are the hurdles you face in the retention of highly qualified teachers?

Response of Participants:

Interestingly, principals reported different hurdles. There is no consistent theme yet emerging. The reported items were:

- School location - urban, suburban, rural, etc.
- Random “noise” that makes teachers feel bad about doing their jobs (items in the news, social media posts, disrespect from students or parents, etc.)
- Work-life balance
- Imposition of school district oversight
- Growth in the district with many new positions to fill

Question Four: In what ways have you overcome these barriers? (This was a probing question to build on the barriers named in question three.)

Response of Participants:

- Support teachers with difficult parents and students
- Eliminate non-essential tasks that interfere with teaching and learning
- Host meaningful teacher-appreciation events
- Work collaboratively with teachers on all school improvement efforts, school decisions, and their needs
- Create leadership opportunities for teachers

Question Five: What are you doing to retain your best teachers?

Response of Participants:

- Offer compensation for class coverage
- Eliminate unnecessary tasks and paperwork
- Work as a buffer between teachers and parents/students
- Manage and motivate students
- Intentionally create a positive climate and culture that supports and coaches teachers and creates a place they want to be
- Cultivate a sense of belonging and family for all Use the leadership team to support teachers, provide professional development, and mentoring, and work on student management, expectations, and apathy

Question Six: What influence does your district office or school board have on teacher retention?

Response of Participants. This question elicited mixed reviews.

Positive Influences:

- Increased teachers’ salaries, increasing incentive programs, and creating bonus programs
- Recognized teachers for their accomplishments
- Provided relevant professional development opportunities for teachers
- Hosted a successful job fair that attracted numerous candidates for hire

Areas to Increase Influence in the Future:

- Strategically recruit highly-qualified candidates
- Thoughtfully consider how implementing new educational policies may potentially impact teacher retention

Question Seven: If you could advise new principals on how to retain teachers, what would you tell them?

Response of Participants:

- Build relational trust with teachers
- Create systems of support for all stakeholders in the building
- Listen to teachers and support their needs
- Remember why you became an educator
- Never criticize
- Always support.

Question Eight: What do you wish you could do, that you currently cannot?

Response of Participants:

- Increase teacher pay
- Have increased oversight in my building and reduce how much the district dictates to teachers
- Remove all non-instructional duties

Question Nine: Can you think of ways that institutions of higher learning can better support your teacher retention efforts?

Response of Participants:

- Continue providing reduced tuition for Master's Degrees
- Help students/future teachers understand methods for effective classroom management
- Help students/future teachers understand methods that engage students
- Help students/future teachers experience the joy of teaching students
- Give students/future teachers a variety of experiences in schools.
- Train future administrators to use best practices to be collaborative, instructional, and transformational leaders

Question Ten: Is there anything you would like to share regarding teacher retention that we missed in the survey?

Response of Participants:

- Teaching is hard work.
- Teachers must have the desire to see students succeed.

## Findings

In this case, a little over half of the principals responded that they struggled with teacher shortages in their schools. However, even those who did not struggle noted that they saw a decline in qualified applicants including those from colleges of education. Filling long-term absences and hiring highly qualified teachers had become more of a challenge. In addition, filling math and science vacancies has been difficult. Certainly, being aware of where the gaps are in hiring helps human resources offices in their efforts to recruit licensed teachers in higher needs areas. However, this does not address what to do to keep those teachers for a career in teaching. Teachers are more likely to stay if they have supportive leadership that considers their emotional and instructional needs and provides material resources (Carver-Thomas and Darling-Hammond, 2017; Cells et al., 2020; Koerber et al., 2023). Targeted, just-in-time staff development must be available for new and struggling teachers as well as a strong induction program to support new teachers (Carver-Thomas and Darling-Hammond, 2017; Koerber et al., 2023).

The issues that served as barriers to retention varied among this sample. Principals reported that the school location (urban, suburban, and rural) was sometimes an issue keeping teachers (Berry et al., 2021). Although an interesting finding, it is not one a Principal can control. The Principal's building location is static. Although they can discuss the benefits of the area with potential teachers and

explain how the area is a benefit to the school, there is not much more they can do. In the interview process, it would be beneficial to make sure the candidate wants to work in that setting and not jump at the first job due to needing a salary.

Principals have worked to overcome the barriers that prevent teacher retention. They have worked on issues that teachers reflect have caused them to leave the profession. In any way possible principals reported that they eliminated the non-essential tasks teachers perform (Berry et al., 2021). This frees up teachers to spend their energy on the job of teaching and working with students to succeed (Podolsky et al., 2017). In this study, principals report that they have worked on supporting teachers with difficult parents and students by acting as a buffer (Whitaker, 2020). They have also supported teachers by working on student management, expectations, and student apathy (Bambrick-Santoyo, 2018). They have created meaningful teacher-appreciation events that intentionally create a positive climate that supports faculty and creates a place that teachers want to be (Podolsky et al., 2017; Whitaker, 2020) and worked collaboratively with teachers on decision-making in school improvement efforts and important school decisions thus, creating leadership opportunities for students in the school building (Bambrick-Santoyo, 2018; Berry et al., 2021). When principals view teachers as colleagues and decision-makers, teachers buy into the school in which they work and the teaching profession in general. In addition, leadership teams have been used to support and mentor teachers and provide professional development for teachers (Bambrick-Santoyo, 2018).

District offices have a positive influence on teacher retention. Positive things that are happening at the district level are salaries are being increased and incentive programs and bonus programs are being created. Principals can also help by rewarding teachers for additional responsibilities at the school and recognizing their achievements financially (Berry et al., 2021; Carver-Thomas and Darling-Hammond, 2017; Koerber et al., 2023). In addition, a district can work to have relevant professional development based on what teachers need (Becker and Grob, 2021; Podolsky et al., 2017; Whitaker, 2020). Lastly, hosting successful job fairs that produce applications for highly qualified teachers is vital to keeping schools staffed (Podolsky et al., 2017).

The advice that principals in the study provided for potential new administrators was insightful. They thought it was important to build relationships and foster trust with teachers. In addition, new principals should build support systems for teachers and students to use (Becker and Grob, 2021; Berry et al., 2021) so that they feel their voices are heard and that their needs can be fulfilled (Whitaker, 2020). This extra measure of support can impact retention. Being a supporter and not a critic was something these principals felt was important.

Principals were very optimistic in their responses. It was interesting that they hoped to have greater control of pay (Podolsky et al., 2017) and oversight in the building. They hoped to act as a buffer between the district and the teachers and remove stringent policies that dictated teaching (Becker and Grob, 2021). Lastly, they deeply emphasized having the ability to remove all the non-instructional duties that teachers must complete throughout the day when they are not instructing students (Berry et al., 2021).

The random “noise” from media sources, social media posts, and politicians can make teachers feel bad and hurt principal’s efforts to retain teachers and for schools of education to attract students to the profession. There is a decline in enrollment in teacher education programs. Colleges of Education make efforts to change the narrative around teaching as a potential career and show the benefits of teaching (Baker et al., 2020), but the work competes with the fast-moving noise of

social media. Currently, teachers are questioning the need to work day and night and have second jobs to support themselves. Teachers want a work-life balance that is present in other careers. Pautz and Vogel, (2020) found that college faculty were motivated by the ability to contribute to society, working with students, and autonomy of teaching in the college setting. The US Department of Education found that when examining women's roles and desires in the workplace that achieve a work-life balance the key desires were flexible work schedules and leave options, family care and accommodations, health benefits, and employment opportunities (US Department of Education, 2010). Since there are a high proportion of women in the classroom, this seems like important information for school districts to consider when they make human resource policy. Principals consider that sometimes district oversight is imposed on teachers and their ability to teach (Becker and Grob, 2021). All these factors combined reflect McClelland's (2009) study on the theory of needs to understand what motivates teachers and how meeting the needs of teachers for achievement, affiliation, and power over one's ability to control others or situations they are in. It is the work of principals to investigate what motivates the teachers at their school and then create support pathways to help teachers meet their needs.

### Conclusion

Principal and district behaviors can help meet the needs and motivations of teachers. It is important to develop and implement effective principal and district practices and policies that foster a supportive and conducive environment for teachers to thrive. This survey has given the researchers an insight into what principals think should be done to help keep teachers in the profession and what colleges can do to support novice teachers in entering the field.

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Planning for the PreK-12 Implementation of the United Nations Vision of Education  
for Sustainable Development (ESD for 2030)  
via Focused Professional Development and Curriculum Enhancement  
by  
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Abstract

*PreK-12 teachers and administrators must be aware of global education expectations. The UN has established the 17 Sustainable Development Goals (SDGs) to be achieved by 2030. This article presents a program model for teacher development to further the UNESCO (2020) vision of Education for Sustainable Development (ESD for 2030). The model focuses on project-based curriculum interventions promoting critical thinking, equity, and inclusivity. It consists of four modules that encourage teachers to develop a global mindset in their students. The model culminates in a capstone project encouraging teachers to participate in action research through professional learning circles. The model's theoretical framework is based on Senge's five disciplines of a learning organization (Senge, 2006) and Sterling's triadic archetype for whole school systems thinking (Sterling, 2003). The model's conceptual framework is drawn from the UN vision of ESD for 2030 (UNESCO, 2020). The structural scaffolds are based on Polka's high-touch model for effective change (Polka, 2023) and related adult learning principles (Knowles, 2014).*

In 1996, the International Commission on Education, constituted by UNESCO under the Chairmanship of Jacques Delors, completed a report titled Learning: The Treasure Within. This report articulated UNESCO's vision for education in the 21st century in the context of the challenges facing our globalized world. The report viewed education as an indispensable asset to overcome the obstacles that hinder the attainment of the ideals of peace, freedom, and social justice. The vision for reshaping education was built on the four pillars of learning: Learning to know, learning to do, learning to live together, and learning to be. Accordingly, this UN plan for global education was designed to facilitate in teachers and learners the development of an acute global mindset to empower them to develop and implement local curriculum programs and instructional activities centered on the interests and needs in local contexts. This article reviews the major concepts associated with the UN mandate on Education for Sustainable Development (ESD for 2030), which encourages humanity to be more open-minded about learning about people, things, and ideas in our global village and apply the newly acquired knowledge, skills, and dispositions to improve the local context, hometown, or country. Thus, "Think globally and act locally."

Almost twenty-five years later, the commons movement at UNESCO began working on re-visioning the four pillars of education as originally outlined in the Delors report. The new proposed four pillars of education could read as follows:

- A. 'Learning to know' is proposed to read as 'Learning to study, inquire and co-construct together.'
- B. 'Learning to do' is being reworked to read as 'Learning to collectively mobilize.'

- C. 'Learning to live together' is proposed to read as 'Learning to live in a common world.'
- D. 'Learning to be' could move toward becoming 'Learning to attend and care.'  
(Sobe, 2021)

The rationale for this educational re-think is an urgent need to meet the challenges of the present times. The COVID pandemic, global warming, loss of biodiversity, and increased inequalities- both social and economic, have exposed the precarity, instability, and fragility of our world. The conflicts concerning justice (regarding the distribution of the earth's resources), human welfare, dignity, and personal development can only be addressed by awakening a collective global consciousness. Education once more comes to the forefront as the key to leveraging cooperation, mutuality, and collective action for inclusiveness, equity, and sustainability.

In 2020, UNESCO published Education for Sustainable Development: A Roadmap (ESD for 2030). This document was geared toward creating a framework for action to further awareness of the 17 Sustainable Development Goals (SDGs) through the use of innovative approaches for reorienting and strengthening the various issues confronting humankind and our world, including education. The 17 SDGs are represented in Figure 1.

Figure 1. The 17 United Nations Sustainable Development Goals for 2030.



In particular, the UN expectation for educational institutions by 2030 is to focus on target 4.7 for SDG 4, with the corresponding indicator being 4.7.1. as articulated below:

**SDG 4: Quality Education**

“Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (UNESCO, 2020, p.2).

**Target: 4.7:**

“By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development” (UNESCO, 2020, p.14).

**Indicator 4.7.1:**

“The extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education and (d) student assessment” (United Nations, 2023). ESD for 2030 highlights five priority action areas that are summarised as follows:

1. The integration of the ESD goals in education policies at the local, regional, national, and global levels for sustainable development.
2. In education and training settings, the focus should be on promoting the whole-institution approach to further the UN SDGs.
3. Building the capacities of educators to empower them with the knowledge, skills, attitudes, and values that will help them understand the SDGs and give them the tools and autonomy to promote these goals through their professional practice.
4. Youth empowerment because they are key members who will be able to address the challenges to sustainable development.
5. Acceleration of local-level actions in communities, as these are meaningful and transformative for sustainable development.

Given this mandate by the UN for integrating the SDGs within education processes, this prototype of a four-module professional development and curriculum enhancement program for educators attempts to address priority action areas # 2-5 as listed above. The specific goals of the proposed professional and curriculum development program are enumerated below:

1. This professional development and curriculum enhancement program builds the capacities of educators by providing them with the knowledge, skills, and values to understand the 17 UN SDGs with specific emphasis on ESD priority action area #3.
2. Through the learning outcomes of the program, educators work on implementing sustainable design initiatives in their curriculum planning, teaching, and assessment practices for student awareness and empowerment. This addresses the ESD priority action area #4.
3. The guiding framework of the four modules of this professional development and enhancement program is Senge's model of the five disciplines of the learning organization interwoven with Sterling's Triadic Model for whole-school systems thinking. This approach focused on addressing ESD priority action area # 2.
4. Every school operates within a local community. Thus, as each school adopts a whole-institution approach to sustainable development, local-level community actions emerge as the various stakeholders buy into the school's vision, and classroom activities reflect the principles of sustainable development. This addresses ESD priority action area #5.

Thus, this proposed professional development and curriculum enhancement program will bridge the knowledge and skills gap in terms of awareness and capacity-building of educators and the implementation of key components of the 17 UN SDGs.

### The School as a Learning Organization

According to Senge (2006), organizational learning is fostered through the practice of the five disciplines listed below:

1. Personal Mastery is the discipline of continually clarifying, reviewing, and deepening a personal vision toward achieving one's goals. It is the power to use one's strengths to channel energy and focus on what is essential. It is the ability to see reality objectively. Organizations truly excel when people within them excel.
2. Mental Models are the deeply ingrained assumptions and individual patterns of thinking that determine how people develop their understanding of the world and how they respond to various situations. The stimulus may be the same, but two different individuals will assimilate the stimulus differently. Being conscious of this

underlying difference in thinking develops tolerance and reflective dialogue both within the self and with the other.

3. Shared Vision is the third discipline of a learning organization. The actors within an organization can develop a 'shared picture of the future.' A shared vision is that which connects with the personal visions of the different actors within the organization. The 'shared vision' becomes a living force within the organization when most organizational players commit to it rather than merely comply with it.

Committed personnel bring energy, passion, and excitement to the vision, which further reinforces and strengthens it.

4. Team Learning is the discipline of aligning and developing the capacity of a team to create the results its members genuinely desire. It is founded on the practice of reflective dialogue that allows individuals to recognize the patterns of interaction that can often undermine learning. Team learning encourages members to train themselves to suspend assumptions and engage in genuine 'thinking together.' The performance of a team depends on individual excellence and how people work together. Teams must have a common purpose and a shared vision. Team learning as a discipline requires regular practice through reflective thinking and dialogue.

5. Systems thinking is the sum of all four disciplines put together. It is the discipline that fuses or integrates the earlier disciplines into a coherent whole so that the organization functions in a manner where the whole exceeds the sum of its parts. Systems thinking is a discipline for seeing wholes. It is a framework for seeing patterns of inter-relationships rather than obstacles to change.

According to Senge et al. (2012), a school functions through the interwoven patterns of influence and interdependence of three nested systems, viz., the classrooms, the school, and the community. In order to nurture a 'school that learns,' changes must occur at all three levels through the integration of the above five disciplines.

Sterling (2003) also believed that systems thinking for sustainable education required a paradigm change where school communities need to be transformed as a 'whole' through a focus on three dimensions-ethos, eidos, and praxis:

1. Ethos encompasses the affective, imaginative, and spiritual dimensions of members within the school community. This refers to how members see the world.
2. Eidos includes the development of ideas and concepts in the minds of individual members. This is how they know the world.
3. Praxis is the ability to reflect and take action. It is how members act in the world.

The triadic model, therefore, is another framework that supports the aforementioned dimensions. It consists of the following three aspects:

1. A vision that is informed by philosophy and is focused on a direction.
2. An image of the desired future that would reflect a core mission and ideas for deliberation.
3. A design that would further the practical implementation of the image.

Teacher Professional Development and Curriculum Enhancement Program  
The proposed "Professional Development and Curriculum Enhancement Program" for pre-service and in-service teachers is comprised of the following key modules:

- A. Foundations for sustainability
- B. Creating a toolbox for sustainability initiatives
- C. Drawing up designs for sustainability through education
- D. Capstone project

This program is planned as a professional development and curriculum enhancement offering to both pre-service and practicing teachers using a cohort-based model. Each cohort may include teacher participants from the same school or probable school placement for student-teaching type experiences, depending on the university supervisor and school placement regulations. Each module within this professional development and curriculum enhancement program consists of four weekly sessions. The sessions may be taken online asynchronously, synchronously, hybrid, or in a “traditional face-to-face” setting, depending on the interests and needs of module presenters, module participants, and their respective educational school district or university regulations or expectations.

Each module of this proposed “Professional Development and Curriculum Enhancement Pilot Program” encourages participants to move through the five disciplines of a learning organization while simultaneously developing the triadic model of a vision, image, and design for the final Capstone project, thus allowing participants to become designers for sustainability. Each module within the program is structured in such a manner that requires a time commitment from the individual participant of about three hours per week.

The planned activities and projects associated with this program are designed to advance global thinking and enhance participants’ deeper understanding and effective applications of the various aspects of the UN SDGs. In addition, participants in this program will reflect on their practice and engage in dialogue with peers to develop a shared vision for sustainability, as well as create useable projects and activities for infusion into their curriculum for students.

A key aspect of this pilot program is an action-research-based Capstone Project, whereby participants will work in small groups to collectively co-construct a viable school project on sustainability. The program advisors provide assistance, including mentors, as well as supplies, materials, and necessary equipment for each group to guide them through the process of planning and implementing their Capstone Project as appropriate for their current or projected teaching assignments.

The philosophical perspective supporting the proposed professional development and curriculum enhancement program is rooted in symbolism. The symbolic perspective allows participants to look closely at events, symbols, rituals, artifacts, and culture within their organization to develop a greater understanding of the interpretive processes that would give them insight and empathy to take effective action (Hatch, 2018). Thus, the ontology of this proposed program is subjective, and the epistemology is interpretivist.

The following table provides an overview of the four program modules with the theory synthesis between Senge’s model of a learning organization and Sterling’s triadic model for whole school systems thinking (see Figure 2).

Figure 2. An Overview of the Theoretical Frameworks in the Four Modules

Alpha	Module Name	Senge’s Disciplines	Sterling’s Triads
A.	Synthesizing foundational concepts for sustainability awareness and applications.	Personal Mastery	Ethos, Eidos
B.	Creating a toolbox for sustainability initiatives.	Personal Mastery Mental Models	Eidos, Praxis
C.	Developing designs for sustainability projects in education settings.	Shared Vision Team Learning Mental Models	Ethos, Eidos
D.	Producing a pragmatic model Capstone Project for curriculum implementation and evaluation.	Shared Vision Team Learning Systems Thinking	Eidos, Praxis

Thus, through the four modules of this pilot program, pre-service and practicing teachers have the opportunity to further develop themselves as lifelong global-thinkers and create “real world” curriculum projects and meaningful activities that “pay ESD concepts forward” to their students as expected by the UN to improve our global village. Teachers’ capacity for self-introspection to understand their own mental models prior to working with others will be expanded. In addition, they will possess the knowledge, skills, and global dispositions to create curriculum projects that incorporate global awareness instructional strategies and activities designed to further quality sustainable education consistent with the UN SDGs within their teaching-learning contexts.

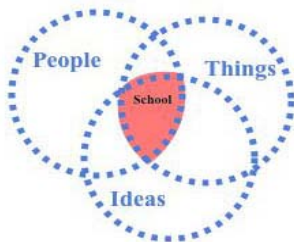
### The School as an Open-Social System

However, educators at all levels of the instructional spectrum, pre-K to doctoral level, need to maintain a visionary awareness that schools are part of a larger social system. Schools are institutions that are constantly evolving to meet the needs of their ever-changing external social, economic, political, and historical contexts, as well as the needs of their constantly transforming internal participants: students, teachers, administrators, parents, and policy-makers. Since schools are fluid, open social systems, educators must recognize the impact on curriculum programs and instructional expectations of both planned and serendipitous events related to people, things, and ideas.

The significance of the relationships of schooling to society and vice-versa, even prior to the COVID-19 pandemic, was postulated by various system-thinkers who stated that there have been and will continue to be significant changes in the historical trajectory of education in micro, macro, and mega organizational contexts because of external and internal system inter-relationships. This open-social system approach contends that everything in an open-social system is interrelated, and any major change in one component of the system has an impact on other components and the entire system, as experienced during COVID-19. This systems view has been promulgated by various researchers, including Von Bertalanffy (1950), Senge (2006), Polka and Guy (2001), Fullan (2005), Baumgartner, Jones, and Mortenson (2014), Hatch (2018), and Polka (2023) who believe that changes in institutions, such as schools, occur based on internal and external factors to perpetuate their survival and enable them to continuously adapt and thrive.

Figure 3, originally developed by Polka and Guy (2001), based on system thinking reviews and presented in subsequent publications (Polka, 2014, 2023), provides a visual representation of schooling as the continuously evolving inter-related system of people (i.e., students, teachers, parents, administrators, board members); things (i.e., books, buildings, busses, desks, chairs, computers); and ideas (i.e., curricula, student grouping patterns, tests, culminating events). Educational organizations, thus, are continuously changing as new and different people, things, and ideas are infused into the fluid open social system as represented by open dotted lines.

Figure 3. Key Components of the Schooling Model

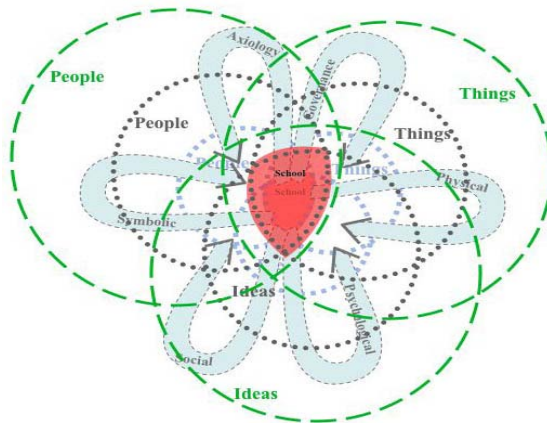


The model, as shown (Figure 3), reinforces the perception of ever-evolving relationships between each of the specific heterogeneous components of the system

as well as with the entire open social system (Polka & Guy, 2001). The figure is also expanded to include six specific heterogeneous components: physical (buildings, books, desks, chairs, computers); psychological (mental health and security needs of students); social (patterns of student cohorts, looping, multi-age grouping); symbolic (school sponsored events such as graduations, proms); axiological (values related to gender, race, equity, diversity, and inclusion); and governance (state laws, district policies, and school procedures).

Each of the six heterogeneous components evolves from the core people, things, and ideas, and each heterogeneous component reverberates into the core, thus continuously further reinforcing and evolving this entire system. This perception of education as a complex open-social system is based on system theories as promulgated by various organizational system researchers including: Von Bertalanffy (1950), Senge (2006), Fullan (2005) and Hatch (2018), who contend that the entire educational system is impacted by and, also, impacts its micro, macro, and mega contexts so that as the environment changes so does the institution of schooling (Kaufman et al., 2002; Hoy & Miskel, 2005). This dynamic is reflected in Figure 4.

Figure 4. Polka-Guy Ever-expanding Open Social-Systems Model



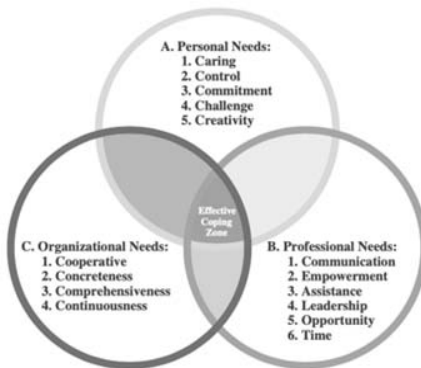
Thus, this ever-expanding open-social system of education has resulted in schools incessantly evolving and assuming ever-increasing micro, macro, and mega responsibilities, including global survival issues such as the UN SDGs for 2030 to provide more than the traditional academic and social learning often associated with schools. Educators must be aware of open-social system thinking to advance their professional growth experiences further and prepare the curriculum enhancements advocated in the UN ESD mandate as articulated in this article.

#### Focused Professional Development and Curriculum Enhancement

The professional development program of this proposed ESD project has structural scaffolds for success designed to meet teachers at their point of need, organizationally, personally, and professionally. The High-Touch Model for Effective Change, as developed by Polka (1997), provides a comprehensive understanding of the three categories of needs at the personal, professional, and organizational levels (see Figure 5). Effective Change occurs at the intersection where the three categories of needs are met. This High-Touch Model for Effective Change scaffolds this “Professional Development and Curriculum Enhancement Program.”



Figure 5. The High-Touch Effective Change Model (Polka)



The program follows the constructivist paradigm, and the content of each module adheres to Knowles principles of Adult Learning (2014). Through this professional development program, participants will work in quality circles or small professional learning communities along with their students and colleagues to create unique curricular interventions that reflect the goals of ESD 2030 as outlined by the UN in its vision for the present time, which is the decade of action from 2020-2030.

Finding professional opportunities associated with the UN SDGs, specifically SDG#4 with a focus on target 4.7, is not particularly difficult. With some guidance and scaffolding, teachers will use their sense of challenge and creativity to build interesting projects that are contextually relevant and pertinent to the lives of their students and meaningful to their local community. The following example specifically illustrates an approach to infuse sustainability projects into the Ontario Secondary School English Curriculum.

The provincial ministry curriculum document for the Ontario English curriculum (Grade 10) lists two compulsory courses and one optional course for the teaching of English. Of these two compulsory courses, one is an Applied course, and one is an Academic course. Academic courses are designed to develop students' knowledge and skills through the study of theory and abstract problems. Applied courses focus on the essential concepts of a subject and develop students' knowledge and skills through practical applications and concrete examples. The option of choosing between an applied or an academic course is open to each student based on their individual skills, interests, and post-secondary goals (Ontario Curriculum and Resources, grade 10: English, 2023).

The principles underlying the English curriculum focus on the understanding of language learning, the ability to communicate with confidence, make meaningful connections between the self and the world, think critically, appreciate the cultural and aesthetic value of texts, use language to interact and communicate with the community and the world as an active citizen. This curriculum is acutely suitable for infusing SDG-related concepts, projects, and activities. These principles in themselves offer many avenues for reflection on sustainability. Teachers can use the tools from the toolbox developed through the second module of the professional development program to draw up designs for sustainability initiatives that could form part of the final Capstone project. The Capstone project could cover aspects of curriculum planning, teaching-learning activities, and assessment tasks.

An example in terms of curriculum planning could be that teachers choose texts for reading in their courses that are written by indigenous writers. This brings into focus respect for native cultures, appreciation of the aesthetic and cultural impact of the text, and an ability to make meaningful connections with the self and the world.

Regarding assessment practices, the curriculum expectations for English learning within the Ontario curriculum are organized into four broad areas of learning: Oral Communication, Reading and Literature Studies, Writing, and Media Studies. The achievement categories for each of the broad areas of learning are grouped under four overall expectations of knowledge and understanding, thinking, communication, and application. The achievement chart in the curricular document explains each of the four overall expectations as follows:

1. Knowledge and understanding- Subject-specific content acquired in each course (knowledge) and the comprehension of its meaning and significance (understanding).
2. Thinking- The use of critical and creative thinking skills and/or processes.
3. Communication- The conveying of meaning through various forms.
4. Application- The use of knowledge to make connections within and between various contexts (The Ontario Curriculum, grades 9 and 10: English, 2007. pp 24-25)

If teachers choose to design sustainability initiatives around the assessment process, they could work on assessments that include the appreciation of literature, short stories, artifacts, and poems that focus on sustainability, the environment, native cultures, inclusivity, economic disparities, etc.

Here again, teachers would engage in dialogue with each other to create specific expectations in line with the overall expectations for the modules to give expression to their individual and joint understanding of the various dimensions of sustainability. They would introspect to understand their own ethos and eidos. Then, they would work to create assessments for their students that bring to life a praxis that is strongly rooted in a collective belief of their shared vision for education that is sustainable through their micro-level efforts in their own sphere of influence. The sustainability-focused teaching interventions employed by teachers across grades within a single discipline would cause the Capstone project to become a celebration of learning on sustainability through the school.

### Conclusion

This professional development program and curriculum enhancement prototype will help participants go through a process of capacity-building that will empower them to develop the knowledge, attitudes, skills, and values to become conscientious practitioners of education for sustainability within their schools and communities. It is imperative for the success of this program that college supervisors and/ or school principals, as the case may be, encourage those participating in this unique learning process. College supervisors or principals must provide aspiring or practicing teachers with time to carve out opportunities for dialogue, reflection, and collaborative planning. Incentive systems must be built in to recognize and appreciate the efforts of the teachers in this venture.

As the school becomes a microcosm that nurtures a culture of sustainability, the ripples will be felt in the local community and further, consistent with the concepts associated with the school as an "open-social system." These small interventions will snowball into collective stories of hope for a positive future. The four pillars of education, as being reworked by the UNESCO Commons, will become the bulwark of the education institution as teachers learn to study, inquire, and co-construct together, to collectively mobilize, to attend and care, and to develop systems of

practice that will elevate education to a force that is harnessed to live better in a common world.

This approach to incorporate the key concepts of the UN SDGs by 2030, especially SDG#4, is based on the high-touch principle that motivated, creative, supported, and highly enthusiastic people can make a significant difference for our 21st-century global future. The global implementation of this project reinforces the encouraging words of 20th-century noted cultural anthropologist Margaret Mead, who once averred, “Never doubt that a small group of dedicated people can change the world...in fact, it’s the only thing that ever has” (Hearst Digital Media, 2023). Therefore, let’s commence to “Think globally and act locally” to save our planet!

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# The Significance and Challenges of Artificial Intelligence in Teacher Education Programs: A Balancing Act

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## Abstract

*As artificial intelligence (AI) proliferates across industries, higher education finds itself at an important crossroads regarding the integration of AI, machine learning, and natural language processing into teacher training programs. This paper explores the complex implications of these emerging technologies for teacher education through a review of literature. The analysis reveals AI's potential benefits for innovation and personalization as well as significant hazards involving data privacy, bias, academic integrity, and teacher displacement. Ultimately, realizing AI's promise in teacher education while mitigating ethical pitfalls will require multi-perspective collaboration on developing oversight frameworks, pedagogical strategies, and policies to guide responsible implementation. By spotlighting issues warranting ongoing research, this study aims to further scholarly discourse on harnessing AI to enrich teaching and learning without undermining education's core humanistic mission. The paper argues that all stakeholders, especially educators, must remain actively engaged in shaping the future trajectory of AI in teacher training and credentials.*

Although the year 2023 does not herald the dawn of the age of Artificial Intelligence (AI), the swift proliferation of emergent technologies like ChatGPT and Google's Bard has significantly heightened its prominence, especially in educational circles. In particular, specialized subsets of AI, such as Generative AI (gAI), Large Language Models (LLM), and Natural Language Processing (NLP), are manifesting profound impacts across a variety of sectors, with higher education being no exception. Within this sector, teacher education programs find themselves at a particularly pivotal juncture. On one hand, these advanced technologies offer unprecedented opportunities for pedagogical innovation and personalization of the educational experience. On the other, they introduce a gamut of ethical challenges, from data privacy issues and the potential for exacerbating educational inequities to concerns over diminished learning or academic dishonesty. This paper undertakes an investigation of the intricate roles that AI and NLP assume in higher education, with a particular focus on their application in teacher education programs. Drawing upon an in-depth analysis of existing literature, this study examines the applications, impact, and ethical dilemmas posed by these technologies to augment ongoing academic discourse on the judicious and ethical deployment of AI and NLP technologies in shaping future educators.

## A Primer on Artificial Intelligence as It Pertains to Teacher Education

The rapid diffusion of AI technologies across diverse industries signifies a seminal shift in contemporary society, comparable to the advent of the Internet or even the Industrial Revolution (Schwab, 2017, p. 7). Within the academy, the footprint created by AI is increasingly evident (Luckin & Holmes, 2016, p. 8). More specifically, the integration of AI into teacher education in higher educational settings has become a focal point of discussion among educators, policy-makers, and scholars alike (Hernández-Leo et al., 2019). The potential of AI to revolutionize various aspects of education, such as personalizing learning experiences,

automating routine tasks, and providing unprecedented analytical insights into student performance and pedagogical effectiveness are all tantalizing possibilities (Abbas et al., 2023).

This involves understanding the potential benefits and challenges associated with AI adoption, as well as addressing ethical considerations such as data privacy, algorithmic bias, and the replacement of human interaction with machine interfaces. As AI continues to permeate various sectors, including higher education, it is essential for teacher education programs to adapt and evolve to effectively integrate these technologies into their curricula (Abbas et al., 2023). By doing so, teacher education programs can better prepare future educators to navigate the increasingly complex landscape of AI integration in educational settings (Shahzad, 2023).

This integration has been greeted with a combination of enthusiasm and caution. On one hand, AI is lauded for its potential to personalize learning experiences, automate routine and/or administrative tasks, and offer unprecedented analytical insights into student performance and pedagogical effectiveness (Luckin & Holmes, 2016; Papamitsiou & Economides, 2014). On the other hand, reservations persist concerning the ethical considerations, including but not limited to data privacy, the potential for algorithmic bias, and the replacement of human interaction with machine interfaces (O'Neil, 2016; Eubanks, 2018). These contrasting perspectives necessitate a nuanced and scholarly approach to the incorporation of AI into teacher education, calling for ongoing research, the establishment of ethical guidelines, and reconciliation, even harmonizing with evidence-based pedagogical practices (Selwyn, 2019).

Given the multifaceted impact of AI on teacher education, it becomes crucial to understand the nuances that different forms of AI bring to the table. The distinction between Artificial Intelligence and its specialized subfield, Generative AI, is not merely academic but holds practical implications for curriculum design, instructional strategies, and educational policy. Understanding these differences allows educators and policymakers to make informed decisions regarding the adoption and ethical deployment of these technologies in the classroom, thus offering a comprehensive roadmap for innovation without compromising the integrity of the educational experience (Crawford, Calo, & Whittaker, 2016).

The terms Artificial Intelligence and Generative Artificial Intelligence are related but differ in scope and application. Russell and Norvig (2020) provide eight different definitions of AI indicating that concept of AI serves as an umbrella term that encompasses a wide range of computational methods for simulating human intelligence. These methods include, but are not limited to, machine learning, natural language processing, computer vision, robotics, and expert systems (Russell & Norvig, 2020). AI can be broadly categorized into narrow (or weak) AI, where the system is trained for a specific task, and general (or strong) AI, where the system has generalized human intelligence across tasks. Artificial intelligence, generative AI, large language models (LLMs), and natural language processing (NLP) are interconnected technological paradigms that have significantly impacted the domain of artificial intelligence, with particular implications for the field of education. This section provides an explication of each of these concepts, tailored for an audience of teacher educators.

Artificial Intelligence is defined as the computational capability to execute tasks generally requiring human intelligence, including problem-solving, learning, and natural language understanding (Huang & Chang, 2022). In educational contexts, AI has demonstrated the capacity to augment pedagogical experiences through personalized learning pathways, administrative automation, and multidimensional teacher support.

Generative AI (gAI) is a specialized subfield of AI concerned with the generation of novel content or data through the analysis of existing data sets. Generative models can create a variety of outputs, such as text, images, and audio, based on learned data patterns (Dickey, Bejarano, & Garg, 2023). Within education, gAI technologies may be deployed to create customized learning materials, formulate assessment questions, or deliver personalized feedback to students. Large language models are a specific class of AI models trained to comprehend and generate human language. These models are constructed based on extensive corpora of text data, enabling them to perform an array of natural language processing tasks, including translation, summarization, and question-answering (Naveed et al., 2023). The capabilities of LLMs in context comprehension and coherent text generation make them potentially valuable resources for educational applications like tutoring, content development, and student assessment (Naveed et al., 2023).

Natural language processing (NLP) serves as a sub-discipline within AI focused on equipping computational systems with the ability to understand, interpret, and produce human language (Prakash, Piquette, & Amaral, 2022). NLP algorithms analyze text and spoken data to extract semantic meaning and respond in human-like fashion. In educational contexts, NLP can be employed to review student responses, render feedback, and facilitate communication between students and AI-enhanced educational tools (Matellio Inc., 2023). While AI holds promise, fully realizing its potential requires grappling with complex challenges. The subsequent section illuminates key issues warranting consideration.

### Challenges and Implications for Teacher Education

Despite the extensive benefits that AI affords to the realm of teacher education, there exist substantial obstacles that necessitate attention. Firstly, the large-scale integration of these technologies mandates substantial financial investment, thereby posing the risk of amplifying existing educational inequalities (Hwang & Chien, 2022). Secondly, a noticeable gap persists in the technological literacy levels among educators, serving as a hindrance to effective AI adoption in teaching environments (Osetskyi et al., 2020). Thus, it is imperative to incorporate training programs aimed at bolstering educators' technological proficiency as an integral component of teacher education curricula (Tzirides et al., 2023).

As conversations about the role of Generative AI in education gain momentum, it is increasingly vital to delineate the distinct characteristics that differentiate general AI technologies from gAI. This clarification is particularly salient as educators grapple with a rapidly evolving technological milieu, replete with both possibilities and challenges. Consequently, a nuanced understanding of AI and gAI is essential for critically appraising their respective capabilities and limitations within the educational sphere (Chan, 2023). By appreciating these differentiators, educators can more effectively navigate the complex technological landscape they find themselves in, making more informed choices about the deployment of AI and gAI in their pedagogical practices (Dellarocas, 2023).

Table 1. Comparison of Key Differentiators Between Artificial Intelligence and Generative AI

CATEGORIES	ARTIFICIAL INTELLIGENCE	GENERATIVE AI
Scope	An overarching term that encompasses a wide range of technologies and methodologies designed for multiple objectives.	A specialized branch predominantly concerned with the generation of new data.
Application	Manifold applications spanning classification, regression, and clustering	Specialized focus on the generation of synthetic

	tasks.	data instances grounded in its training sets.
Objective	Objectives are diverse, including but not limited to function optimization, outcome prediction, and object classification.	Distinct aim to generate data that is statistically analogous to its training set.
Examples	Manifests as various forms including search algorithms, pathfinding algorithms, and data analytics tools.	Typically realized as text completion software, synthetic image generators, or machine-assisted art creation platforms.
Ethical and Social Implications	Broad implications, including job displacement, data privacy, and other ethical concerns.	Adds a supplementary layer of complexity due to its ability to create misleading or false data.

Source: Data adapted from "Artificial Intelligence and the Future of Teaching and Learning" by the U.S. Department of Education, Office of Educational Technology, 2023, <https://www2.ed.gov/documents/ai-report/ai-report.pdf>.

While the complexities of gAI and its application in teacher education warrant a comprehensive examination, the scope of this article is intentionally narrowed to focus on other pressing concerns. Specifically, the ensuing materials will address the applications of gAI technologies that most acutely challenge the traditional paradigms of teaching and pedagogy—chief among these being ChatGPT and similar language models. These technologies are of particular importance due to their transformative and, at times, contentious impact on educational systems, thereby necessitating close scrutiny by educators and policy-makers alike.

It is also beneficial to examine the role of Natural Language Processing (NLP), yet another subset of AI, and how it could synergize with existing pedagogical practices. NLP's capabilities in text analysis, language understanding, and conversational interaction could add nuanced layers to instructional design and teaching methodologies, especially in the realm of literacy education, language acquisition, and interactive pedagogies (Rundell, 2021).

For instance, NLP has been successfully used to improve students' reading and writing skills, as well as to provide automatic feedback on self-explanations and summaries of reading samples (The Learning Agency Lab, 2020). Moreover, NLP can be employed to analyze the language used by both teachers and students in a class to define their mental states and improve the learning environment (Shiraly, 2021). By integrating NLP into educational settings, educators can enhance the classroom experience and better address the unique needs of each student (Kurni, Mohammed, & Srinivasa, 2023).

Therefore, the integration of NLP tools into teacher education programs can address several critical pedagogical challenges. For example, automated text analysis can assist educators in rapidly evaluating students' written assignments for both content and stylistic features, thereby providing more targeted and timely feedback (University of Michigan, 2017). Moreover, conversational agents utilizing NLP could function as virtual teaching assistants, capable of answering student queries or providing supplementary explanations, thus allowing human educators more time for in-depth, personalized teaching (Essel et al., 2022).

While the preceding sections provided important background on AI and its subsets, further examination is still needed regarding the integration of these



technologies into teacher education specifically. To that end, this article will now focus on five key areas: 1) the need for teacher educators to stay current with AI advances; 2) potential pedagogical innovations enabled by AI, with particular focus on language models; 3) possible tensions between algorithmic recommendations and teacher autonomy; 4) limitations AI could impose on professional autonomy; and 5) relevant ethical and social implications that may accompany adopting these tools.

Centering analysis on these salient themes aims to enrich the scholarly conversation surrounding the careful implementation of AI and NLP in teacher training programs. Given the primer on fundamental AI concepts already covered, the final sections will zero in on the most pressing issues requiring attention from practitioners and policymakers in order to ensure ethical and effective AI integration in teacher education.

### Literature Exploration Approach

This study utilizes the described literature review to synthesize current academic viewpoints on the applications and ethical considerations of AI, generative AI, and natural language processing within teacher education. The process for conducting the review systematically followed these steps:

1. Database Searches: Comprehensive searches of prominent educational databases such as ERIC, Education Full Text, and Education Source were undertaken. Targeted keyword searches encompassed: "artificial intelligence," "AI," "generative AI," "gAI," "natural language processing," "NLP," "teacher education," "preservice teacher," "ethics," and "higher education."
2. Citation Chaining: This technique was employed to delve deeper into the research realm by examining the reference lists of pivotal articles, enabling the identification of foundational and influential sources that might have been missed in initial searches.
3. Exploration of Preprint Archives: Emergent research available in preprint archives, specifically arXiv and psyArXiv, was examined to ensure the incorporation of the latest, yet-to-be-published or about-to-be-published insights.
4. Real-time Monitoring with Google Scholar: Alerts on Google Scholar were set up using the central search terms, ensuring the continuous tracking and inclusion of newly published pertinent literature.
5. Timeframe Priority: While the focus was primarily on literature from the last 5-10 years, foundational works from prior periods were not excluded, given their importance in shaping contemporary understanding and the journey to get to this understanding.
6. Interdisciplinary Considerations: To achieve a holistic perspective, interdisciplinary databases such as ProQuest Central were explored, tapping into related fields like educational psychology and instructional technology.
7. Scope Expansion for Depth: Recognizing the niche nature of AI in teacher education, the research scope was expanded when necessary to embrace literature from the broader contexts of K-12 and higher education. The purpose was to glean relevant themes and insights that could be applied to the teacher preparation context.

The objective of curating the literature study was to construct a well-rounded portrayal of the possibilities, difficulties, and ethical dilemmas associated with the use of AI technology in the field of teacher education. Both affirmative and critical

perspectives were given equal consideration, so offering a full analysis of the academic debate.

### The Role of AI in Teacher Education: Insights from Educator Jerry Blumengarten as a Micro Case Study from Social Media

To understand the impact of AI in teacher education, it is beneficial to examine the discourse among educators on social media. One notable contributor is Jerry Blumengarten, an educational consultant and board member of Thrively.com (Blumengarten, n.d.). On his X (formerly Twitter) social media page, Blumengarten asserts that "Tech gives the quietest student a voice" (Cybraryman, n.d.-a). Although the brevity of the medium limits detailed discussion, it can be inferred that Blumengarten is referring to the potential of technology to empower students in ways that traditional methods may not, thereby authentically representing the student.

Blumengarten's association with Thrively.com, an online educational platform "committed to creating an equitable and joyful learning environment" (Why Thrively, n.d., para. 1), suggests his adherence to pedagogical perspectives that prioritize student well-being and individual learning preferences. This association and implies that Blumengarten embodies for illustrative purposes what is often referred to as a "teacher's heart." Blumengarten's educational philosophy is more explicitly unpacked in his statement, "We need to focus on the feelings and needs of each of our students and find out the best ways that they learn" (Cybraryman, 2023). This statement, tagged with #NT2T meaning New Teachers to Twitter, a community-oriented hashtag curated by teachers to provide resources and insights (Moura, 2015), demonstrates Blumengarten's commitment to nuanced pedagogy and fostering a supportive digital community for educators.

Blumengarten's contributions extend beyond philosophical musings; he has actively curated a comprehensive list of AI tools and web-based resources aimed at enhancing classroom teaching (Cybraryman, n.d.-b). This compilation serves as a practical guide for educators interested in integrating AI to improve pedagogical outcomes. Blumengarten's wide-ranging contributions, from theoretical assertions to practical resources, encapsulate the multifaceted role of AI in contemporary teacher education. His participation in these discussions exemplifies the intersection of technology and pedagogy that is becoming increasingly prominent in the modern educational landscape. It is therefore appropriate to argue that individuals like Blumengarten are leading a critical discourse aimed at shaping the ethically sound and pedagogically effective integration of AI in teacher education. By considering insights from a diverse range of educators, we can develop a nuanced understanding of how AI may influence the theory and practice of teacher education.

### Pedagogical Advancements Through AI and NLP

The integration of AI and NLP in educational settings offers transformative potential that has been empirically validated by a growing body of scholarly research. Abu-Ghuwaleh and Saffaf (2023) highlight that these technologies enable innovative teaching methods and contribute to the personalization of learning environments. They emphasize that AI and NLP tools can be effectively integrated into project-based learning environments, leading to reduced achievement gaps and ensuring more equitable access to high-quality educational opportunities for all students.

AI-driven data analytics offers a compelling avenue through which personalized education can be achieved (Rouhiainen, 2019). By leveraging machine learning algorithms, educators can identify students' areas of academic strength and weakness. This detailed understanding facilitates the development of targeted teaching strategies aimed at addressing specific learning gaps. As a result, the

classroom becomes an adaptive learning environment where pedagogical interventions are data-informed and student-centric.

Moreover, the integration of AI and NLP tools with current educational systems offers an additional layer of instructional flexibility. For instance, intelligent tutoring systems such as ASSISTments leverage NLP algorithms to assess student textual responses in real-time, providing immediate feedback to both teachers and learners (Heffernan & Heffernan, 2014). This real-time feedback fosters a formative assessment culture, where learners are continuously informed of their progress. Such immediacy allows for more fluid and responsive instructional adjustments, better catering to individual learning needs.

The issue of equity in education is another relevant point addressed through the application of AI and NLP. According to Abu-Ghuwaleh and Saffaf (2023), when these tools are effectively deployed in project-based learning scenarios, there is a noticeable reduction in achievement gaps. They argue that "AI and NLP tools can...ensure that all students have access to high-quality educational opportunities" (Abu-Ghuwaleh & Saffaf, 2023, p. 7). This impact is highly significant as it aligns with the broader educational objective of creating equitable learning spaces that accommodate diverse learning styles, socio-economic backgrounds, and academic capabilities (Holmes, Bialik, & Fadel, 2019).

Whether through personalized instruction, data-driven pedagogy, or the pursuit of educational equity, these technologies offer robust solutions to some of the most pressing challenges in contemporary education. It is imperative that educators, policymakers, and researchers collaborate to ensure these tools are implemented ethically and effectively. As the field continues to evolve, ongoing scholarly inquiry will be crucial for understanding the broader implications and refining the applications of AI and NLP in educational settings in regard to pedagogical improvement.

#### Challenges to Professional Autonomy in the Context of AI in Teacher Education

The integration of AI in educational settings presents both opportunities and challenges. AI systems, driven by data-based algorithms, can suggest teaching methods or content that may conflict with educators' professional judgment, potentially challenging their professional autonomy (Selwyn et al., 2020). For instance, AI systems may recommend teaching methods more focused on test preparation than on fostering critical thinking or creativity, potentially pressuring educators to adopt methods they believe are not in the best interests of their students (U.S. Department of Education, Office of Educational Technology, 2023; Mohammed, 2023). Moreover, the use of AI in education can lead to potential conflicts between students and instructors, such as privacy concerns, changes in power structures, and excessive control (Seo et al., 2021). AI teaching assistants, while beneficial in automating routine tasks, can lead to discrepancies between answers from AI, the instructor, and human teaching assistants, potentially causing conflicts (Seo et al., 2021).

The potential erosion of teachers' autonomy due to AI algorithms is a significant concern. AI algorithms could relegate teachers to passive implementers of predetermined curriculum and assessment methods, undermining their ability to lead and innovate in the classroom (Foltynek, et al., 2023). This concern is echoed by Selwyn and colleagues (2020), who argue that the integration of algorithms for decision-making in educational settings can challenge the professional autonomy of educators. However, it is important to note that the perception of AI's impact on teacher autonomy varies among educators. Some view AI as a threat to their professional autonomy, while others see it as a tool that can enhance their teaching

practice (Foltynek et al., 2023). This divergence could be linked to differences in teacher training and school AI integration approaches. For instance, educators who have received comprehensive AI training and exposure are more likely to appreciate the benefits of AI in decision-making and personalized instruction (Foltynek et al., 2023).

A recent survey conducted by the EdWeek Research Center, as reported by Langreo (2023), revealed diverse viewpoints among educators concerning the influence of AI on teaching and learning. Nearly 50% of the respondents held either a negative or very negative perspective on the impact of AI in the educational sphere over the next five years. Conversely, 27% of those surveyed expressed a positive or very positive outlook. This divergence in opinion may be attributed to discrepancies in teaching philosophies, instructional methods, and the focus on fostering critical thinking and creativity. The findings underscore the importance of valuing educators' professional judgment when integrating AI systems into educational settings.

The U.S. Department of Education (2023) has stressed the importance of keeping "humans in the loop" when using AI, particularly when the output might be used to inform a decision (p. 53). Also, as the department encouraged in the 2023 report, teachers, learners, and others need to retain their agency. AI cannot "replace a teacher, a guardian, or an education leader as the custodian of their students' learning," the report stressed (U.S. Department of Education, Office of Educational Technology, 2023, p. 16). Therefore, while AI presents opportunities for enhancing teaching and learning, it also poses significant challenges to the professional autonomy of educators. It is crucial to ensure that the integration of AI in education respects the professional autonomy of educators and is guided by ethical considerations (Foltynek et al., 2023; U.S. Department of Education, Office of Educational Technology, 2023). Looking beyond autonomy, AI's ethical implications demand ongoing investigation. Researchers are only beginning to probe the potential adverse societal impacts of these rapidly evolving technologies.

### Ethical and Social Implications

The integration of AI in teacher education raises significant ethical and social implications that warrant continued research and debate. One major concern is algorithmic bias, where machine learning models inadvertently perpetuate prejudices present in their training data sets, potentially exacerbating inequities in education (Benjamin, 2019; Zobeida et al., 2022). Data privacy is another key issue, as extensive learner data collection required for AI personalization could expose sensitive student information if proper cybersecurity precautions are not taken (Masters, 2023).

The adoption of AI technology also poses questions related to the teacher-student dynamic. There is a risk that the deployment of AI could deconstruct the traditional teacher-student relationship, reducing educators to facilitators or even making them obsolete (Zobeida et al., 2022). As the use of AI increases, ongoing research will be important to understand and address any challenges students may face in accessing human mentorship, guidance, and support.

Moreover, some express concern that AI tools could potentially contribute to academic dishonesty if used improperly (U.S. Department of Education, Office of Educational Technology, 2023). Further research is needed to understand how AI may influence learning strategies and motivation. (U.S. Department of Education, Office of Educational Technology, 2023). AI tools, such as text-generating models, can be used by students to generate essays or complete assignments, which can lead to academic dishonesty. This is sometimes referred to as "AI-giarism" (Chan, 2023). This process undermines the core principles of academic integrity and

detracts students from their learning journey. Additional apprehensions also revolve around impacting pedagogical design and assessment as the integration of AI in education “challenges traditional definitions of academic misconduct, emphasizing the need to adapt in response to evolving AI technology” (Chan, 2023, p. 1)

While AI technologies offer the capacity for personalized educational recommendations and automated grading, they also present opportunities for misuse, such as generating essays or completing assignments, thereby jeopardizing the integrity of the educational system. However, a study by Bendechache et al. (2021) that engaged adolescents in Dublin in discussions about AI’s societal impact yielded valuable insights. Contrary to concerns about negative implications, the findings of the study were predominantly positive in character and tone.

Still, there is a concern that the adoption of AI could exacerbate educational disparities (Rodway & Schepman, 2023). Schools with fewer resources may not be able to implement AI solutions effectively, thus widening the educational gap between well-funded and underfunded institutions (Zobeida, Salas-Pilco, Xiao, & Hu, 2022). This issue is further complicated by the fact that AI systems require continuous updates and maintenance, potentially locking out educational systems with fewer technical resources (Zobeida, Salas-Pilco, Xiao, & Hu, 2022).

Ongoing development of ethical guidelines, teacher training programs, and oversight structures is needed to ensure AI promotes educational equity. By continuously reevaluating the social implications of these rapidly evolving tools, the educational community can harness AI’s benefits while minimizing harm. In light of these multifaceted concerns, achieving balance emerges as pivotal. Doing so necessitates nuanced policymaking and safeguarding educator and student interests.

### The Balancing Act

Balancing the aforementioned opportunities and challenges of AI in teacher education requires a multi-stakeholder approach, involving educators, policymakers, and technology developers in a substantive dialogue (Baidya & Baidya, 2023) to ensure the ethical and effective use of AI in teacher education (Nguyen, 2023; Masters, 2023). This approach is essential to address the ethical risks posed by AI, such as data security, deconstructing the teacher-student role structure, educational inequality, and alienation from educational goals (Bu, 2022). The integration of AI will require rethinking teacher roles. With appropriate training and oversight, AI could augment rather than replace teachers’ responsibilities. Therefore, to support this concept, it is important to consider the potential benefits of AI in education, such as personalized student recommendations, autograding essays, and improving educational resources (Nguyen, 2023). AI can also help address challenges in underfunded education, such as the lack of experienced teachers, high student-teacher ratios, and outdated curricula (Muranga, 2023). However, it is crucial to acknowledge the potential drawbacks, such as ethical concerns related to using student data to power AI (Nguyen, 2023).

To ensure the responsible and effective use of AI in teacher education, several countermeasures can be implemented. These include redefining teachers’ fundamental duties, instructing students in the sensible use of AI, and promoting effective regulation of AI’s deployment in education (Bu, 2022). Collaboration and partnerships among educational experts, AI developers, and data management researchers are also essential to respond to the rapidly evolving global educational landscape and drive the development of AI-EdTech (Khosravi, Sadiq, & Amer-Yahia, 2023)

Moreover, it is important to consider the perspectives of various stakeholders, such as preservice teachers, who acknowledge that AI chatbots can be useful as teaching and learning aids for both teachers and students (Yang, 2022). By engaging diverse stakeholders, it is possible to collaboratively develop ethical frameworks and policies to guide the implementation of AI in teacher education (Masters, 2023). Building on this synthesized analysis, salient conclusions can be drawn to guide responsible AI integration while upholding education's highest aims.

### Conclusions and Recommendations

In conclusion, the discourse surrounding AI, gAI, and NLP in teacher education reveals the intricate balance between the promise and perils of these rapidly evolving technologies (Muranga, 2023; Nguyen, 2023). On one hand, AI-enabled tools hold significant potential for advancing pedagogy through personalized learning, administrative efficiencies, and data-driven insights (Bu, 2022). The distinctions between AI and gAI shed light on their specialized applications, like gAI's capacity for generating simulated student interactions and customized content (Khosravi et al., 2023). However, these technologies also raise pressing ethical questions around data privacy, educational equity, and the reconfiguration of traditional teaching methods – as exemplified by debates over ChatGPT (Bu, 2022).

Navigating this complex landscape demands a collaborative, multi-stakeholder approach to developing ethical frameworks, pedagogical strategies, and implementation guidelines (Baidya & Baidya, 2023; Masters, 2023; Yang 2022). Ongoing academic inquiry and dialogue are essential for ensuring AI, gAI, and NLP serve as levers for positive change rather than vectors for ethical dilemmas or inequality. Sustained research is needed to fully understand these technologies' long-term impacts on social dimensions of learning like identity development (Langreo, 2023; U.S. Department of Education, 2023). As pedagogical and technological frontiers rapidly advance, educators, policymakers, technologists, and preservice teachers must maintain a living discourse – continuously integrating new insights to guide the ethical integration of AI capabilities across higher education and teacher training programs (Ascione, 2023).

This analysis underscores that effectively harnessing the power of AI in education while addressing its disruptive risks is contingent on multidisciplinary collaboration and enduring academic engagement. Only through persistent empirical research, ethical vigilance, and a solutions-focused dialogue amongst all stakeholders can educators utilize these technologies to enrich teaching and learning for all. The prudent integration of AI demands ongoing collective oversight.

### Recommendations based on a review of recent literature

1. Foster AI literacy among educators: Teachers require foundational knowledge of AI systems to evaluate and implement tools appropriately (Langreo, 2023). Training should build critical perspectives on AI.
2. Promote educator involvement and leadership: Educators must help shape the design and deployment of AI technologies through continuous feedback and representation (U.S. Dept. of Education, 2023).
3. Develop ethical frameworks and oversight: Proactively identifying risks and biases is critical, involving all stakeholders (Akgun & Greenhow, 2022).
4. Align AI with educational goals and culture: AI tools should enhance objectives like creativity and critical thinking, not replace human roles (Alliance for Excellent Education, n.d.).

5. Prioritize continuous professional education: Given the pace of change, ongoing training on emerging best practices is essential for faculty, staff, and administrators (Ascione, 2023).
6. Encourage interdisciplinary perspectives: Integrating expertise from ethics, digital technologies, educational technology, and the learning sciences is key to creating balanced policies and practices (Stavarakakis et al., 2022).
7. Conduct further research: More evidence is urgently needed on AI's long-term impacts on emotional development, identity, and other social dimensions of learning (Xu & Choi, 2023).

With careful implementation guided by research, we can harness the potential of AI to improve education while safeguarding its core mission and values for all students. This will require actively confronting risks, tackling biases, and preserving human judgment and oversight. Through sustained engagement, we can progress responsibly and ethically into this complex new frontier of AI in education.

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Preparation and Retention Strategies to Populate the STEM Teaching Profession  
by  
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Abstract

*The teacher shortage in this country, including STEM teachers, is documented and continues to be a concern of school districts and education agencies. This article highlights questions from three undergraduate STEM majors who are preparing to become certified STEM teachers. The article responds to these questions by presenting a discussion of recommendations that prepare the students to become certified to teach in high school settings and provides recommendations for retaining STEM teachers in our profession.*

The concern for pre-kindergarten through twelfth grade students to be prepared to become scientifically and mathematically literate remains a focus for students to achieve cognitive skills that will provide the capacity to compete on a globalized platform. For more than two decades in the United States, educational outlets have documented an increased STEM (Science, Mathematics, Engineering, and Mathematics) teacher shortage (Craig et al, 2023; USDOE, 2022; Buttner, 2021; Garcia & Weiss, 2019; Hutchison, 2012). A concern is not having enough qualified Algebra teachers to provide the foundational mathematics skills needed for advanced mathematics instruction that could negatively influence our country's global competitive stance. The STEM teacher shortage is especially a concern in urban, rural and communities that serve marginalized populations; therefore, potentially impacting the educational and economic stability of our future generation of workforce producers (U. S. Bureau of Labor Statistics, 2019). As this country continues to experience a teacher shortage that includes a STEM teacher shortage, approximately 270,000 all-subject teachers will leave this profession by 2026 (Torpey, 2018). With the STEM teacher shortage being a concern, higher education professors often receive comments and questions from their students such as the three examples below:

Question 1: I thought I wanted to work in an industrial profession, I am now considering entering the teacher education certification program in the College of Education. How can I become an effective teacher?

Question 2: I will graduate in two years with a mathematics major, biology minor, and certification to become a high school teacher. What can I do to become an informed teacher education candidate?

Question 3: This is my last semester before I graduate with a chemistry major. I have decided that I want to become a high school teacher. But I did not enter the Teacher Education Certification Program. So, how can I become a teacher?

Undergraduate STEM majors often have a desire to become a certified teacher. However, many feel they are not prepared to meet the challenges required of new teachers who are entering our school systems. STEM majors who decide to become certified to teach STEM courses in high schools often face instructional challenges. These challenges are often due to the consistent placement of students with non-certified teachers who have not had an educational opportunity to acquire the knowledge background needed to teach a specific content subject. Also, another challenge is not providing consistent mentoring and professional development

sessions that provide instructional strategies to support students who experience a variety of learning challenges. As far back as 1995, Darling-Hammond and McLaughlin recommended that mentoring and professional development could assist in the retention of certified STEM teachers. The author of this article believes recruitment into the STEM teaching profession must begin with undergraduate STEM majors or minors who have an effective science or mathematics background evidenced through an honors level grade point average and a desire to teach the next generation who will enter the workforce as productive citizens. Nationally, there is a STEM teacher shortage of approximately 100,000 high school teachers and 150,000 middle level teachers (Feder, 2022). This shortage requires undergraduate teacher education programs and university-based post-baccalaureate/graduate programs to design and present instruction that addresses a variety of educational topics, such as differentiated instruction, literacy strategies to support all levels of learners, and asset-based classroom management approaches.

### Theoretical Framework

This article considered the theoretical framework of Funds of Identity as it relates to undergraduate and post-baccalaureate/graduate students using their self-definition and self-understanding of deciding to become a high school STEM teacher. Undergraduate and post-baccalaureate/graduate students who decide to become a STEM teacher can actively consider their self-identities in deciding their future goal to become a STEM teacher (Esteban-Guitart & Moll, 2014). Funds of Identity consider the everyday experiences of the learner and in this article, teacher candidates and post-baccalaureate candidates who are preparing to become a high school teacher. As candidates progress through the certification process of becoming a teacher, the path that one takes to learn information, to practice and use academic resources provided in their certification courses, to learn with students in school settings, and to highlight their learning once placed into an instructional role as a certified high school teacher is documented through their success. Nationally, there is a STEM teacher shortage of approximately 100,000 high school teachers and 150,000 middle level teachers (Feder, 2022). This shortage requires undergraduate teacher education and post-baccalaureate programs to present methods providing instruction that present a variety of educational topics, such as differentiated instruction, literacy strategies to support all levels of learners, and asset-based classroom management approaches. This article provides a response to the questions posed by the three students to their higher education instructors along with recommendations for retaining entry level STEM teachers.

### A Discussion of the Three Questions Asked by the Future STEM Teachers

A discussion of the preparation and recruitment for STEM majors who are considering the teaching profession should provide a description of the requirements needed to reach the culmination resulting in teacher certification. The goal of teacher education and post-baccalaureate/graduate programs should not be just to place STEM teachers into high needs STEM classrooms; but, to prepare effective STEM teachers who will remain as dedicated and effective professionals in the teaching field and who will effectively prepare the next generation to enter the workforce. The following discussion provides recommendation to consider in response to the three STEM majors who are considering becoming a high school STEM teacher.

Question 1: I thought I wanted to work in an industrial profession, I am now considering entering the teacher education certification program in the College of Education. How can I become an effective high school teacher?

Most STEM majors initially consider industry employment as their first goal. However, STEM majors are presented with educational offers from initiatives such as the UTeach program. UTeach and replication programs offer simultaneous enrollment in STEM content courses and education courses that lead to graduation with teacher certification. Although courses provide strategies that will support all learners that include English learners, understanding how to become an effective teacher is a typical concern for many teacher education certification candidates. STEM majors considering teaching as a profession should know: 1) Teachers are provided summer professional development sessions that present and explain strategies that are research-based and can support student achievement. First year teachers are usually provided with opportunities that encourage collaborative exchanges, with their professional peers, to discuss and practice these strategies. 2) First year teachers are usually provided with a mentor who will share instructional strategies with their mentor, allow time to often co-teach the practicing of these strategies, and discuss additional ideas for more effective instruction implementation. 3) First year teachers are provided with demonstrated strategies that will support students in acquiring, applying, and retaining content needed to become a successful student. 4) First year teachers are usually provided with continuous professional development to respond to school and district instructional initiatives. 5) First year teachers often receive opportunities that can result in the enhancement of their base salary amount. 6) First year teachers receive benefit packages that contribute to a retirement fund. and 7) First year teachers and other teachers are provided with administrative support that can cover a variety of initiatives.

Question 2: I will graduate in two years with a mathematics major, biology minor, and certification to become a high school teacher. What can I do to become an informed teacher education candidate?

The question asked above is an example of the need to support STEM majors who plan to enter the teaching profession. Initiatives such as the Uteach program and Track 1 NOYCE funded undergraduate scholarships offered from the National Science Foundation recruit students for the STEM teaching profession as early as their undergraduate sophomore year. Students are invited to presentations that outline and demonstrate the advantages and requirements of these pathways to teacher certification. These presentations allow time for students to ask questions and to receive responses, individual conversations, and follow-up discussions to provide additional information. STEM majors who select the teacher certification route should be provided with: 1) Advanced STEM courses. 2) Enrollment in pedagogical courses that provide access and the ability to practice strategies that support the content learning of all students, including English learners, special needs students, and other student needs identified by school districts. 3) An academic advisor who meets with teacher certification candidates at least once during each enrolled semester to review academic progress and to provide responses to academic questions. 4) Access to the Career Center at the university regarding interview techniques and recruitment events offered at school districts. 5) A field-based assignment over several semesters in classrooms that demonstrate effective teaching practices. 6) The ability to serve as a student teacher for at least one semester in a high needs school that will provide additional instructional support during this experience. and 7) A university content supervisor who will observe, mentor, and provide recommendations that will assist with the improvement of their instruction before the teacher education candidate becomes a certified teacher.

Question 3: This is my last semester before I graduate as a chemistry major. I have decided that I want to become a high school teacher. But I did not enter the Teacher Education Certification Program. So, how can I become a teacher?

Undergraduate students often have not determined the type of employment they want to enter before graduating with a degree. Therefore, students who decide later to enter the teaching profession should have access to university-based post-baccalaureate or graduate program opportunities that lead to teacher certification. The post-baccalaureate/graduate program option should present a realistic lens into the teaching profession and provide the sequence needed to become a certified teacher such as: 1) Having a documented STEM undergraduate degree and the content knowledge background needed to teach high school STEM courses. 2) Having the content knowledge to pass all state required assessments. and 3) Having the agency to invest the time to complete the requirements needed to become a certified STEM teacher while often being employed. Although the education system wants to reduce the STEM teacher shortage, the intent is not to just produce a high number of STEM teachers; but, instead to produce prepared and qualified STEM teachers who are committed to remaining in the profession. So, a response to Question 3 should consider: 1) Designing a post-baccalaureate/graduate set of program courses and experiences that are streamlined but academically rigorous. 2) Having the professional staff needed to teach, mentor, observe, and provide constructive feedback that includes having the capacity to review the instructional implementation of this feedback in classrooms with students. 3) Providing review sessions that present the assessment objectives needed to pass required state tests. 4) Ongoing mentoring by a university professional following the induction year of teaching. 5) Assigning a campus mentor for at least the first three years of teaching. and 6) Providing safe spaces for asking questions and receiving responses from various campus staff including campus administrators.

In conclusion, the three questions posed in this section are only examples of the extensive issues STEM majors encounter in their undergraduate programs. Students who graduate without obtaining certification requirements to enter the teaching profession should also have pathways to become a teacher. In both cases, those who have a strong STEM focused content background and who are mentored along the journey of becoming an effective teacher are provided with the structure to remain in the STEM teaching profession.

#### Focus Group Responses from First Year STEM Teachers

In addition to a response to the three questions posed by STEM undergraduate students, the researcher conducted a focus group interview with 10 first year STEM high school teachers. The focus group was used to allow participants to discuss their experiences as a new teacher (Fitzpatrick et al, 2011). The focus group was composed of nine first year teachers who graduated with teacher certification and one first year teacher who completed a post-baccalaureate program. The focus group interview used items such as: 1) What was your experience with your campus mentor? 2) Identify the types of support you received to assist you with your instruction. 3) What topics did you receive from professional development sessions? and 4) Did you receive support from your campus administration? Below is a sample of two responses from the focus group participants.

A Biology Ninth Grade Teacher (who identified as a Black female) I was hired one month before I graduated from college. During the summer, I was invited to attend a series of professional development sessions that gave me a lens into the culture of the district, and I met other new teachers. The information I learned

focused on discipline techniques, strategies for English learners, and ways to use the state objectives into my lesson planning. During my first year, I was provided a content mentor who met with me weekly and frequently observed my teaching. My mentor gave me ideas about instructional improvements and often demonstrated instructional strategies that I could use with my students who represented a variety of instructional levels. I enjoyed a positive experience during my first year and think I will make this a life-long profession.

A Tenth Grade Mathematics Teacher (who identified as a White male) I was hired before I graduated from college. My first year of teaching was a bit challenging because I received students who were mostly non-English speakers. I was assigned a mentor and she provided me with ideas I could use to support my students. She encouraged me to use their Funds of Knowledge to support their understanding of mathematics. I also received consistent support from professional development sessions. My teaching peers were also helpful in sharing ideas and materials with me. I did not really have much support or negative reactions from my principal. I gained a significant amount of information from my undergraduate program and this information was enhanced through continued learning. I plan to enter a graduate program to get a master's in mathematics education and remain in this profession for several more years.

In summary, the first-year teacher participants felt supported and mentored through a variety of activities that included professional development sessions that discussed many of their instructional needs. They were also provided a campus mentor who provided effective support, and they experienced a working environment that provided support from their grade-level professional peers.

#### Recommendations to Support Retaining STEM Teachers

The researcher provides a list of recommendations that could assist with the retention of effective STEM teachers. These recommendations come from the researcher's 15-year history of receiving federally funded projects that supported undergraduate STEM majors and career changers recruited from scientific industries to enter the STEM teaching profession. The recommendations are to: 1) Provide a university mentor for the first year of teaching and a campus mentor for the first three years of teaching. 2) Provide professional development sessions that are need-based, content specific, responsive to campus-based initiatives, and are ongoing throughout the academic year. 3) Time is provided for professional peer interactions to discuss a variety of items that include lesson planning, assessment practices, and student progress monitoring. 4) Provide, demonstrate, and practice literacy strategies with professional peers before implementing these strategies into their instructional practice. 5) Provide and demonstrate effective assessments that are content-specific; but are innovative and include a variety of formats. 6) Provide internal grants to support purchasing of useful instructional products. and 7) Encourage parental involvement that supports student achievement.

#### Conclusion

The realization is that a teacher shortage is hindering the ability to ensure that our country can sustain our positive global identity. This realization has encouraged institutions of higher education and other education agencies to identify pathways to support the reduction of this educational shortage that includes the STEM teacher workforce. Identifying ways to inform undergraduate STEM majors about the teaching profession provides a potential response to begin addressing this shortage. In addition, providing a pathway to attract STEM professionals to become career changers to enter the STEM teaching profession should become a major

consideration. Pre-kindergarten through twelfth grade students in this country deserve an educational opportunity to have teachers who are prepared and can provide innovative and knowledge-based instruction that prepares our high school graduates to become college and career ready.

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The Role of Practitioners in a Changing Political and Educational Landscape:  
Creating a Culture of Inquiry

by  
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Abstract

*In this reflective essay, we focus on practitioner inquiry to describe how reimagining perceptions and perspectives through innovative practice can create new landscapes of possibilities for educators (Robertson & Brock, 2023). We argue the relevance and importance of practitioner inquiry and highlight its promise to re-energize practice in today's socio-political climate. We lament the deprofessionalization of teachers and return to our roots as educators, drawing on luminaries such as John Dewey and Donald Schon along with contemporary scholars whose work embodies their scholarship.*

*To this end, we utilize Dana and Yendol-Silva's (2003) definition of practitioner inquiry as a "systematic, intentional study of one's own professional practice" (p. 5) to frame practitioner inquiry as opportunities for a holistic means of action and reflection (see Zeichner & Liston, 2014). We conceptualize practitioner inquiry as reflective practice and reject the notion of teachers as technicians who implement the work of others removed from the local classroom context (Dana & Yendol-Hoppey, 2020; Zeichner & Liston, 2014). Instead, we highlight practitioner inquiry as an authentic method for educator empowerment enabling educators to identify, step back, and systematically investigate practice (see Dana & Yendol-Hoppey, 2020; Zeichner and Liston, 2014). We specifically use the term puzzles of practice, coined by Munby and Russell (1990), to reframe problems as opportunities and to reflect both 'in' and 'on' teacher actions and those of their students (Schon, 1983, as cited in Zeichner & Liston, 2014, p. 14).*

*We open with a brief review of literature on the state of education and its shifting landscape and provide an overview of practitioner inquiry followed by a discussion of accountability and its impact on teachers, classroom practice, and the field of teacher education. Next, we present three cases of educators whose inquiries transformed both person and practice, and lastly, we call on teacher educators to raise critical awareness of the need to buck the status quo and make practitioner inquiry a hallmark of practice.*

A Shifting Educational Landscape

The state of teacher education has undergone a significant shift in recent decades, one that embarks on a quasi-business-/corporate model limiting creativity, critical thinking, and the quality of classroom interaction and instruction (Olivant, 2015). Zeichner (2020) elaborates on the push for accountability and "managerial professionalism" which has impacted teachers' autonomy and "led to a deskilling of teachers' work" (p. 39). The monumental nature of navigating today's sociopolitical climate underscores the need to open pathways for educators to reclaim practice and build on local knowledge that surfaces from the everyday experiences of teachers and their students (Cochran-Smith & Lytle, 2009; Dana & Yendol-Hoppey, 2020; Zeichner, 2018). Cochran-Smith and Lytle (2009) contend that critical reflection arises from the intersection of theory and practice, linking problem posing and action directly to the teaching context. Building on this argument, we illustrate

how practitioner inquiry can challenge the notion of teachers as technicians or consumers of research rather than producers of local, practical knowledge.

### Practitioner Inquiry: An Overview

Several variants of applied research fall under the umbrella of action research, one of which is teacher research or practitioner inquiry (Cochran-Smith & Lytle, 2009; Merriam & Tisdell, 2016). Despite the merits of practitioner inquiry, Campbell (2013) reminds us that practitioner inquiry has often been considered soft science because it tends to focus on knowledge that cannot be generalized. Therefore, its usefulness to advance knowledge has been questioned (Hendricks, 2013). Alternatively, Pine (2009) considers the nature of empirical positivist research problematic because it fails to contextualize participants' purposeful actions and experiences in classrooms and educational spaces. Moreover, Robertson and Brock (2023) maintain that growth in professional learning happens through ongoing inquiry and knowledge creation with the freedom to focus on puzzles of practice. Thus, today more than ever, we feel the need to advocate for practitioner inquiry as a means of sustaining teachers and reclaiming practice.

The concept of practitioner inquiry originated in John Dewey's call for teachers to engage in reflective practice (Dana & Yendol-Silva, 2003; Zeichner & Liston, 2014). Zeichner and Liston (2014) describe Dewey's conceptualization of open-mindedness, responsibility, and wholeheartedness as key attributes of reflective practitioners. Open-minded teacher inquirers are active listeners who entertain differing views and possibilities, while responsibility entails critically questioning the consequences of their actions. Teacher inquirers who are wholehearted routinely seek to understand and improve practice. Essentially, Dewey aimed for balance "between reflection and routine, between thought and action" (Zeichner & Liston, 2014 p. 13). Reflective practice in this vein positions teachers as generators of knowledge.

When Kurt Lewin coined the term "action research," in the 1940s, he sought to "link the cycles of theory, practice, and problem-solving" (Burgess, 2006, p. 421). Freirean critical pedagogy further influenced notions of action research in the 1970s by promoting critical consciousness and social action to raise awareness of oppressed and marginalized people (Burgess, 2006). We recognize the influence of Freire and Dewey in Schon's portrayal of action research as a "cognitive process of posing and exploring problems or dilemmas identified by the teachers themselves" (Dana & Yendol-Silva, 2003, p. 4). Schon (1983) was cognizant of the temporal nature of reflection that occurs before and after an action, noting that practitioners reflect during action when they problem solve while engaged in an activity. Zeichner and Liston (2014) consider these understandings gained through practice as "knowledge-in-action that teachers accumulate over time" (p. 16). Educators who inquire into their own practice are self-reflective. They seek change by wondering, posing questions, and collecting and analyzing data informed by relevant literature (Dana & Yendol-Hoppey, 2020). In this way, educators can challenge the status quo (Cochran-Smith & Lytle, 2009).

### Challenging a Climate of Accountability

Although accountability measures have dominated education discourses and practices for 30 years, they have failed to improve student learning outcomes (Pearson et al., 2014; Afflerbach 2022). Sadly, Afflerbach (2016; 2022) maintains that high stakes and standardized assessment scores remain the most frequent measure of students' growth. As a case in point, let us consider the impact of testing on an elementary classroom. Carol, a veteran teacher, described the assessment regimen in her classroom. She explained that at the beginning of each semester, all

students are given the Star Reading Assessment (<https://www.renaissance.com/products/assessment/star-360/star-reading-skills/>). Students who test below grade level are then assessed using a benchmark assessment program, and those who are identified as Response to Intervention Tier 2 or Tier 3 striving readers are further assessed every two weeks using running records, a schedule that leaves little opportunity for innovation, creative engagements, or joyful teaching and learning.

Depending on the district, teachers assess students using a variety of instruments to establish language and literacy levels and to measure progress. Given the overwhelming pressure to assess students and demonstrate results, we wonder when teachers have time for joyful teaching, those palpable moments when teachers know that something special has occurred. More than a pleasant feeling, joy happens during “moments of intensity when dealing with something powerful and important” (Meyer & Whitmore, 2011, p. 280). Carol’s story elucidates how a culture of accountability can diminish joy and silence teachers, leaving teachers and students voiceless. Common assessments attempt to measure students’ mastery of skills and strategies; however, state mandated assessments ignore “powerful factors such as motivation, engagement, and self-efficacy” (Afflerbach, 2016, p. 31; see also Afflerbach, 2022). Creativity, resourcefulness, and wonder are mostly left out of this equation.

### Politicization of Education in U.S. Schools

Acrimonious debates have resulted in legislation reducing teacher autonomy, restricting curriculum, and banning books in public schools across the U.S. Alleyne (2022) noted that 17 states have enacted or recommended bills to regulate and restrict how educators teach American history, civics, and government with the intent to repress curricular materials, citing ideologies typically tied to misinformation about critical race theory, race and ethnicity, and sexual orientation and gender identity. Unfortunately, this number is likely to increase given today’s polarized electoral climate and the bans on teaching concepts and books reflective of today’s politics of policy (Kissel, 2023).

We find it disturbing that educators’ curricular autonomy is being censored and restricted. Teachers are losing their jobs, and others are forced to voluntarily resign based on seemingly arbitrary complaints raised by organized groups of parents whose aim is to take control of school boards and run for local offices (Kissel, 2023). These groups have politicized the teaching of concepts deemed harmful to children, creating echo chambers that censor and suppress those with differing views (Zeichner, 2019). At the heart of this rampant censorship are issues of autonomy and academic freedom. To this end, Reinking et al. (2023) state that “legislative action...moves professional practice into the political realm, subject to all the forces and vested interests inherent in that domain” (p. 105). Thus, prohibited concept and age appropriateness laws (Kissel, 2023) add another layer of challenge for already overburdened teachers (Marken & Agrawal, 2022), placing K–12 education in greater jeopardy (Zeichner, 2018).

In addition to legislative and state mandates, district-level decisions, procedures, and regulations further impact teachers (Zeichner, 2018). Darling-Hammond (2019) found accountability a challenging concept, as attempts to professionalize the profession have simultaneously de-professionalized educators and diluted content. Teachers endure the stress and pressure of new calls to improve student performance often with foreboding and a sense of powerlessness resulting from a general lack of regard for their expertise. The loss of control at multiple levels coupled with increased calls for accountability has created a clash

between authenticity and performativity (Zeichner, 2018). Zeichner (2018) explains that authenticity is doing what one knows is best for students versus meeting accountability measures that may not be in students' best interests.

Authenticity is often lost when schools and districts emphasize performativity. The act of teaching is a complex web of tensions and paradoxes that shapes classroom life, yet typical reform movements involve teachers implementing the work of outside experts (Dana & Yendol-Hoppey, 2020). Implementing research generated by others is problematic, as classroom teachers are closest to the children and are better able to assess the local context and determine students' needs (Buelow et al., 2023). Helping teachers align professional learning to their curricular and learning goals can enable them to implement innovative practices and understand the how and why of what works in their unique classroom settings (Robertson & Brock, 2023).

### A Changing Political Landscape: The Need for Critical Inquiry

In today's political landscape, it is imperative for educators to enhance instruction and create balance in their instructional routines and practices. The onus rests on educators to create pedagogical spaces in which social, cultural, and historical contexts inform knowledge within classroom communities of practice (Lave & Wenger, 1991). To provide conducive and equitable learning spaces, it is necessary for educators to investigate and critique their pedagogy, which resonates with Dewey's notions of open-mindedness, responsibility, and wholeheartedness. Carter Andrews et al. (2017) recommend that "critical inquiry...requires a mindset for and active engagement in regularly posing questions that consider how our personal and professional lives and educational experiences are mediated by systems of inequity" (p. 122). It is a means to move beyond commodified perceptions of what constitutes effective practice and attend to the sociocultural and affective aspects of authentic teaching and learning in everyday classroom contexts (see Zeichner & Liston, 2014).

### Challenges of Implementing Practitioner Inquiry

As we have noted, a number of scholars critique the policies shaping public education (Apple, 2015; Kissel, 2023; Zeichner & Peña-Sandoval, 2015). Apple (2015) mourns the loss of respect for the education profession and refers to the current state of education as a "site of struggle" (p. 3). Olivant (2015; see also Zeichner, 2019) further elucidates the disconnect between the current educational system and the needs of society and communities. In response, Zeichner and Peña-Sandoval (2015) focus on the following ways to transform education: develop school, home, and community partnerships to establish shared responsibility; directly connect coursework to the teaching context; help pre-and-in-service teachers enact pedagogies that foster learning and creativity; practice meaningful accountability; and provide mentoring experiences to inform and enhance teacher's preparation.

Likewise, Dana (2016) argues that the essence of practitioner research is the self-study of one's own practice. She outlines six reasons why practitioner research is relevant in present-day teacher preparation discourse; however, we strategically focus on the following: (a) incorporating evidence-based practices and (b) informing the praxis of teacher educators. Dana recommends that practice-based evidence should be used in conjunction with evidence-based practice to make knowledgeable judgments.

Thus far, we have identified aspects of the current educational system that hamper innovative practice and acknowledge the challenges in bucking these trends. That said, the word "challenge" presents a ticklish dilemma when applied to

practitioner inquiry, as challenges are often indicative of thorny issues that strike at the core of how practitioner research is envisioned and enacted. For example, education students often enter our courses with dispositions that take a decidedly positivist bent. Differences seen at the national policy level play out across schools and educator preparation programs. Our students tend to draw on what they know and what is familiar to them. Common terms found in academic research and school achievement language such as correlate, determine, predict, prove, and test in tandem with binaries such as positive and negative are not neutral. They are imbued with underlying values that can cloud perceptions.

Although practitioner inquiry is intended to be unique, holistic, and reflexive, action research texts typically instruct readers to identify a research problem and draft a problem statement. Conceptualizing research problems sometimes leads to deficit orientations in relation to participants and settings that reify stereotypes and counter Dewey's (1938) notions of open-mindedness, responsibility, and wholeheartedness. To resist and re-frame deficit orientations, we encourage teachers to 1) think about inquiry as a collaborative process by which they expand their understandings and entertain new possibilities (Short, 2015) and to 2) ground practice in a sense of place and knowledge of students, colleagues, and community (Hubbard & Power, 2003).

Emig (1983, as cited in Goswami et al., 2009) suggests that our "governing gaze" (pp. 6-7) reflects what we think we see and our resultant expectations. Practitioner inquirers use their governing gaze to frame the questions that guide their inquiries. Therefore, interrogating one's governing gaze and checking assumptions are critical components in practitioner inquiry, especially when engaging with marginalized communities. In their quest to overcome barriers related to deeper immersion in practice, Dutro et al. (2018) eloquently reframe the metaphors by which to describe practice. Rather than clinical, field, or practicum, they conceptualize their work with teachers and students as a bridge that is co-constructed, infused with care, and walked together in partnership.

### Creating Opportunities for Practitioner Inquiry

Practitioner inquiry is inherently relational. Dutro et al. (2018) employ the metaphor of a beating heart to describe the partnerships they form with undergraduates and children. We think it apt to center research at the heart of practice. Like Dana (2015), our approach to practitioner inquiry is cyclical in nature, a "spiral" that extends throughout our professional lives (p. 163). Dana describes an inquiry stance as "one's way of being a teacher" (p. 165). It is the essence of our being as educators and the way in which we live our worlds, adopting an informed critical stance. Yet, questions arise, and we join Dana in asking: when do practitioners develop an inquiry stance? Do they develop it as a product of the process? How do they develop it?

### Importance of Collaboration in Practitioner Inquiry

Collaboration is key to conducting practitioner inquiry (Dana & Currin, 2017). As poignantly highlighted by Lytle (1996), reflective educators "regard educational problems and issues not solely as individual matters but also as social, cultural, and political concerns that may require collective action" and form collaborative units that are models for self-reflection (p. 93). Although individual practitioners can successfully engage in this type of inquiry, collaboration can offer a constellation of ideas to enrich the process of knowledge construction.

For us, immersing teacher education students in the process and practice of inquiry is mutually constituting. That is, we employ a Freirean approach where

discussion and reflection shape practitioner stance as a creative act, which, in turn, shapes and guides students' actions (Fecho, 2011; Freire, 2000). Students engage their interests through literature and dialogue. We use action research methods as guidance for conducting practitioner inquiry; however, students self-select the majority of their texts based on their topic of inquiry. They conference with us and with critical colleagues to shape and refine their thinking, the questions that guide their inquiries, and their methods. We often hear from students that working with critical colleagues is a vital component of their course experience.

In our practice, we follow Dana's (2015) process to initiate practitioner inquiry in partnership with students. She cautions, however, that when research is divorced from teaching, there is little potential to develop transformative practices. Therefore, our students conduct their inquiries at their sites of practice. We encourage their wonderings and ask them to envision their research by completing a proposal that helps them plan and reflect on their inquiry. The students develop data collection instruments. They analyze data, write up their findings, and present their studies conference style. Their culminating summary report outlines their findings and sets new ideas in motion for future inquiries. Students' inquiry projects are generative and engage the class in community.

The inquiries are both a process and a practice. We refrain from talking about research as a problem to be solved. Students develop carefully crafted question statements. As practitioner inquiry is intensely personal, our students question their subjectivity and illuminate their participation. To this effect, Efron and Ravid (2020) encourage practitioners to acknowledge the values and beliefs they bring with them to the study, their past involvement with the topic or phenomenon, and their relationships with participants. We ask students to situate their positionality within their study and see this as a cornerstone to developing an inquiry stance.

### Opportunities for Transformative Practice

Reflecting on Zeichner and Peña-Sandoval's (2015) suggestions for improving teacher education, our practitioner inquiry courses create opportunities for engagement. In the following paragraphs, we highlight three examples of practitioner research that embody the transformative nature of inquiry. The cases presented below took place in a year-long practitioner inquiry course that serves as a master's capstone course for early childhood, reading teacher, reading specialist, and Master of Arts in teaching candidates.

#### Aileen: Implementing Content and Disciplinary Literacies in Science

Aileen, a pre-service teacher working on her Master of Arts in Teaching degree, wanted her students to be producers of science rather than passive consumers. Having taken a content area and disciplinary literacies course the previous year, Aileen was passionate about implementing tools, techniques, and instructional routines to actively involve students in learning science. In her inquiry proposal, she understood that to effectively teach science required more than simply providing students with content information. Aileen believed that students needed to feel involved with their learning. She sought to understand how using instructional routines could enhance students' science comprehension and which routines students perceived as beneficial. Aileen's students were co-collaborators and played an integral role in her inquiry.

Aileen incorporated concept maps, diagrams, graphic organizers, a geologic time story, and questioning into her instruction and curricular engagements. But she was at a loss as to how to holistically assess students' perceptions about the benefits of using them. She chose to use student response letters. She wrote letters to her students and then modeled how to write a thoughtful, reflective response.

Aileen's cooperating teacher required her to give chapter tests; however, she and her students communicated back and forth through letters at the end of each chapter for six weeks, which provided a wealth of data. The letters gave her a pulse on students' learning and allowed her students to feel valued and heard. As she reflected on her learning, Aileen was surprised by the level of open and honest communication shared between her and her students. One of her key findings was that open and honest communication was central to student perceptions of their learning experiences.

To triangulate data from the response letters, Aileen also conducted lunchtime focus groups as a means of member-checking. She received human subjects' approval to conduct her inquiry and audio-taped the focus group sessions, which she transcribed verbatim. Aileen found that her students did not mind writing letters, but they really enjoyed and appreciated her writing back to them. As she reflected on her findings, she considered the importance of responding to students and letting them know she valued their opinions. Aileen used the students' responses to refine her lessons, and the students noticed. Being able to give feedback to the teacher and have the teacher consider their feedback was of paramount importance to her students.

Throughout her inquiry, Aileen connected her university coursework to her students' classroom performance, providing an exemplar of what meaningful accountability might look like in practice. Her students identified group work, vocabulary instruction, and questioning routines as most beneficial. Moreover, she observed students supporting other students during group work, which contributed to creating a sense of community. Together Aileen and her students built a classroom community that evidenced caring and mutual respect. She credits practitioner inquiry with helping her gain experience in adapting curriculum to meet her students' needs.

Ann: Assigning Less Homework

Teachers in our courses often complain about students' failure to complete homework. They hypothesize that students: 1) don't care; 2) don't value their education; and/or 3) are too busy hanging out with friends or playing video games. The teachers also blame students' parents. Ann, a veteran high school English teacher who was completing her master's degree and reading teacher endorsement, had been teaching for six years. She expressed frustration over what she perceived as a lack of effort and motivation to complete homework. Ann began the course with a clear agenda to find out why her students would not do their homework. She framed this as a problem; however, she came to engage in Freirean problem posing where she questioned her and her students' realities and contemplated different means for taking action (Saul & Saul, 2016). Ann initially felt compelled to assign substantial quantities of homework to reinforce and teach the school's dense curriculum but began to rethink and evaluate her homework practices.

Ann obtained permission from her principal and gained buy-in from students and parents to conduct her inquiry with her first-period freshman English class. Working with her critical colleague, Ann developed an open-ended questionnaire, which she administered to students and parents. She was astonished by the findings. Thirteen of seventeen students responded that homework was only sometimes helpful for learning. Both students and parents indicated that although homework was important, it was becoming an oppressive practice. As students typically take six classes per day, they often end up with four or more hours of homework per night, eating into family time. Although some students had jobs or participated in co-curricular activities, others cared for younger siblings, and their parents expressed feeling overwhelmed by the volume of homework. This was an aspect of practice that Ann had not considered.

Student and parent responses to Ann's questionnaire led her to refashion her instruction. First, she assigned less homework. Second, she reduced the amount of lecture time and devoted more time to discussion and collaborative learning. Third, Ann sought to make in-class assignments more relevant to students' lives.

Homework consisted of short assignments that could be completed in 10–15 minutes, and class time was used for discussion, community building, and projects. In addition to the questionnaire, Ann collected data from student journals and kept a daily reflective journal where she described each lesson and the activities she used to engage students. She captured her thoughts and recorded her observations. She also used first and second quarter grades to triangulate data.

In her analysis of data from students' journals, Ann found that students enjoyed doing hands-on activities. They commented on taking notes rather than copying from the board, stating that taking their own notes was more helpful because they could focus on new information instead of what they already knew. Ann observed that students were smiling more in class. She noticed that she wrote fewer referrals and detentions. Like Aileen, she was surprised by her findings. Ann found that reducing homework and increasing activities enhanced student engagement. The shift in her classroom ecology produced a stronger classroom community. After writing her summary report and presenting her research, Ann produced a video explaining how her teaching and identity as a teacher had been transformed. Her case exemplifies how teachers can balance standards and accountability while embedding open-mindedness, responsibility, and wholeheartedness into their practice.

#### Moneerah: Reading and Retelling Stories in a Second Language

Moneerah, an early childhood teacher and international student, was pursuing a master's degree in early childhood development. She was not affiliated with a school or center. Moneerah enrolled in the year-long action research course for early childhood educators to complete her program of study. Through readings and discussions, she became interested in early literacy. At first, Moneerah was concerned with reading accuracy and pronunciation, but through her readings, she changed her perception of the reading process to adopt a more holistic approach. Moneerah was particularly interested in the affordance of technology to foster young children's multimodal literacies after observing an early childhood classroom where students used iPads to read and retell stories. She decided to inquire into story comprehension with two first-grade students, her daughter and the daughter of a close friend.

Given her interest in early childhood literacy and technology, Moneerah investigated the differences between oral retellings using a retelling guide (see Goodman et al., 2005) and StoryKit™<sup>1</sup>, a mobile storytelling app that enables children to create a digital book that can be shared with friends and family via email (Bacon & Al Jabr, 2022). Moneerah purposefully chose StoryKit because it allowed her young participants to author their retellings. She obtained human subjects approval to conduct her inquiry and audiotape the retellings and interviews.

Moneerah read four stories to the children. The stories were read and retold in English. The children gave two oral retellings using a retelling guide that Moneerah adapted from Goodman et al. (2005) and used StoryKit to retell the other

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<sup>1</sup> StoryKit™ was designed at the University of Maryland's Huma-Computer Interaction Lab and supports end-users in 175 countries around the globe (Bonsignore, Quinn, Druin, & Bederson, 2013).



two stories. She employed a think aloud protocol to introduce the children to the app and gave them several opportunities to practice before asking them to retell the stories using StoryKit. Moneerah conducted informal interviews with the children following each retelling. She then transcribed the retellings and interviews verbatim, noting commonalities and distinctions in the retellings and responses.

Moneerah found the children enjoyed listening to the stories and creating retellings using the app (see Bacon & Al Jabr, 2022). They loved being able to save their stories and revisit them later. Moneerah observed how in the second retelling using StoryKit, the children's stories had more pages, longer sentences, and more story details. The children worked independently but shared ideas and tips on how to use the app. They also commented on and discussed each other's retellings, which enhanced their language acquisition and writing development. The StoryKit app allowed them to be mobile and interactive as they composed. They drew pictures, recorded themselves, talked about the stories, and used the features of the app to help them author their version of the stories. One of the children explained that with StoryKit "you could see more difference because I'm drawing and I'm typing stuff with my words and I'm recording" (Bacon & Al Jabr, 2022, p. 167). The richness of the children's stories highlighted the limitations of solely relying on oral retellings and illuminated possibilities for multimodal composing with young emergent bilinguals.

Moneerah's inquiry led her to recognize the importance of giving children control over their own learning and see what constructivist teaching looked like in practice. She learned that when children control their learning, they are more likely to be engaged in the learning activity and can be more creative. She found that when the children retold the story orally, they mostly summarized the story. But when the children wrote and illustrated their retelling using the app, they created what Rosenblatt (1995) refers to as an aesthetic writing experience.

Like Aileen and Ann, Moneerah came to understand the importance of children's agency during learning engagements. She has since graduated and returned to her home country. As noted, Moneerah and Heidi published a book chapter on Moneerah's practitioner inquiry that underscores the importance of incorporating multimodal literacies to support emergent bilinguals' language and literacy development. Through her inquiry, Moneerah came to value the benefits of practitioner inquiry and intends to anchor her teaching in collaborative inquiry. *The Transformative Power of Practitioner Inquiry*

The cases presented above exemplify the power of practitioner inquiry to inform and transform practice. They epitomize the embodiment of inquiry as stance. Aileen, Ann, and Moneerah established partnerships with students who became co-collaborators in their research. Additionally, Moneerah's inquiry demonstrated the capacity of young children to collaborate as participants and inquirers. Her inquiry supports the growing argument for incorporating technology in early childhood classrooms and underscores how technology can enhance print-based literacies (Bacon & Al Jabr, 2022). In each case, the teachers drew on their coursework to frame, inform, and guide their inquiries, enabling them to discover new understandings of innovative practice.

### Discussion and Implications

Teacher education programs prepare teachers to meet the diverse needs of a changing educational landscape, and practitioner inquiry offers an avenue to improve and transform practice. As we consider opportunities to re-imagine practice, we maintain that self-reflective inquiry is central to engaged practice. Practitioner inquiry in its various forms can serve as a means by which educators are able to maintain professional integrity and reclaim practice in an era of accountability and

polarization. The current climate is harmful for education and society writ large. Book bans, prohibited concepts, and ill-informed accountability measures are negatively impacting teachers, students, and communities. To strike a more hopeful chord, practitioner inquiry can provide invaluable experience for educators, generating knowledge-in-action that can inform and impact the local context. Zeichner and Peña-Sandoval (2015) provide a voice of reason and call for balance, as it is incumbent on educators to work bottom-up, beginning in teacher education courses and taking root in classrooms and communities to advocate in concert with professional organizations. In the following paragraphs, we outline key implications for engaging in practitioner inquiry.

The first relates to teacher knowledge about the art of self-study. Creating opportunities for educators at all levels to practice self-study should be at the core of teacher preparation. A reflective, reflexive practitioner can evaluate the different elements that impact teaching and learning and ways to validate students, capitalize on strengths, and meet their needs. Teachers require opportunities and mentoring to imagine and enact innovative practices.

The cases presented in this article highlight the value of practitioner inquiry and its potential to transform person and practice in science education, English language arts, and early childhood education. The changing educational and political landscape requires nimble, flexible, and creative teachers who are knowledgeable about implementing pedagogical content knowledge. Aileen and Ann collected data that illuminated student needs, enabling them to re-organize their instruction. Their inquiries underscored the importance of classroom community. Similarly, Moneerah's use of technology emphasized the benefits of multimodal composing for young emergent bilinguals in a process that allowed for creative self-authoring. Their inquiries reveal how re-organizing established initiatives can open spaces for practitioner inquiry to flourish (Cochran-Smith, 2009; Dana & Yendol-Hoppey, 2020).

The second implication connects to common narratives about students. The practice of self-reflective inquiry can help educators counter typical narratives, engage in problem posing to identify solutions, and take action in ways that benefit students, families, and communities. Educators must be vigilant as volatile educational debates can influence perceptions of students and families. Aileen and Ann's inquiries enabled them to respond to students' learning needs and build communities where students felt valued. Moneerah's inquiry demonstrated the importance of agency and choice in facilitating young children's authorship using technology. Their cases highlight how inquiry can inform instructional choices, curriculum, and create spaces that challenge common assumptions and preconceived notions of students and their abilities.

Thirdly, given today's national educational and political climate, there is a need for curriculum that supports educators as activists. We see the genesis of this growing movement and have found that inquiry can shed light on teaching and learning in environments that affirm and support. Therefore, we call on educator preparation programs to create opportunities for teachers to reconceptualize practice and provide opportunities for collaborative dialogue and action to further the creation of relevant, responsive curriculum across disciplines.

In summary, support must be in place for educators to question and reflect on practice to make informed decisions about what works in their classrooms. A standard "one-size-fits all" approach will not lead to engaged practice or allow educators to teach for equity. In the words of Carter Andrews et al. (2017) "understanding our roles and identities as researchers and activists is arguably more critical now than ever before" (p. 124). We can never lose sight of what matters

most: the need for engaged practice by practitioners who are closest to the students, families, and communities they serve.

### Conclusion

The art of practitioner inquiry generates knowledge-in-action. Its purpose is to support local decision making and action to improve and enhance the process and practice of teaching and learning. We argue that to be effective, teaching must extend beyond the rudimentary and reflect the context in which it occurs. Therefore, we call on educators to be cognizant of the role of inquiry in honing practice and becoming open-minded, responsible, and wholehearted practitioners. In our view, the capacity to enact meaningful change in education rests in the power of teachers as self-reflective inquirers and their undeniable capacity to challenge and change the status quo.

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# Teacher Well-being: Perspectives from Early Career Educators

by

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## Abstract

*Teacher well-being is a key factor in the professional satisfaction for beginning teachers. A feeling of well-being among early career teachers enhances their ability to cope with challenges during the crucial first years of teaching and strengthen their commitment to the profession. Unfortunately, teachers often have lower perceived feelings of well-being than other professions and frequently find themselves ill-prepared to handle the multi-layered expectations they face. This study explores this topic from the perspective of new teachers regarding factors that impacted their feelings of well-being. Two areas were of particular interest: a) the influence of relationships and b) the impact of school culture and support. Data was collected from thirty beginning teachers who completed a questionnaire with 10 who participated in in-depth interviews. Our findings examine multiple factors that promote or detract from their confidence, satisfaction, and overall sense of well-being.*

Teacher well-being is a key factor in the overall satisfaction and a sense of accomplishment for those who choose teaching as a career. A feeling of well-being among early career teachers enhances their ability to cope with the challenges during the crucial first years of teaching, strengthening their commitment to the school and the profession (Day, 2017).

Nevertheless, teachers often have lower perceived feelings of well-being than other professions (Grenville-Cleave & Boniwell, 2012; Turner & Thielking, 2019). Such a perception is especially true for novice teachers who enter the classroom full of enthusiasm and motivation but soon find themselves overwhelmed and ill-prepared to handle the immense challenges and multi-layered expectations they face (Martin, Andrews & Gilbert, 2009; Gourneau, 2014). The consequence, unfortunately, is that about a third of beginning teachers leave the profession within the first three years of teaching (Brill & McCartney, 2008), and approximately half leave the field by the end of the fifth year (Gallant & Riley, 2018; Karsenti & Collin, 2013).

The high level of attrition among early career teachers presents severe challenges to the educational system. The substantial cost of replacing teachers who leave the classroom, leads to a significant financial burden on school districts (Boyd et al., 2011). The negative impact of this high departure rate among new teachers goes beyond economic issues, as it also causes problems inside and outside the classroom (Rodgers & Skelton, 2014; Ronfeldt et al., 2013). Early attrition negatively impacts the stability and continuity of a school's culture (Boyd et al., 2011; Fulton, Lee & Yoon, 2005) and reduces the morale of those left behind, teachers and students alike (Gallant & Riley, 2018).

For novices and veterans alike, well-being is a vital component of teacher career satisfaction, helping them exhibit resilience, cope with work-related stress and thrive in their practice (Kutsyuruba et al., 2019). Additionally, a sense of well-being enhances teachers' effectiveness (Day & Kingston, 2008), commitment to the school, and sense of professional fulfillment (Kern et al., 2014). These satisfied teachers

tend to provide high-quality care, give more positive feedback and spend more one-on-one time with students (Zinsser, Christensen, & Torres, 2016).

Current research on teacher well-being has been derived from two general perspectives: One perspective conceptualizes well-being as residing within the individual, and a second associates well-being within a particular context (Schaefer, 2013). Focusing narrowly on individual factors implies that a lack of well-being arises from new teachers, themselves, suggesting that they lack competency and are unable to adjust to their new positions as educators. Evidence suggests however that contextual factors within the school setting are closely linked to teachers' well-being (Saeki, et al., 2018; Tran, 2015).

Bronfenbrenner (1995) highlights a social-ecological framework influencing novice educators' satisfaction with their professional experience. This framework is divided into two categories: (a) interpersonal and informal relationships new teachers form with their students, colleagues, and administrators (e.g., Gallant & Riley, 2014; Kutsyuruba et al., 2019; Lam, 2020), and (b) the impact of school culture on the working environment of new career teachers (Johnson et al., 2014).

In this study, we utilize Bronfenbrenner's social-ecological framework to examine the role of the local school setting on novice educators regarding their well-being (Naghieh et al., 2015). We explore this topic from the perspective of new teachers and investigate factors that, in their eyes, contributed to, or detracted from, their feelings of well-being. Two areas were of particular interest: a) the influence of relationships within the school and b) the impact of school culture and mentoring programs on novice teachers.

#### Conceptual Framework and Literature Review

Well-being is somewhat challenging to define (Pollard & Lee, 2003). The term is used quite differently in various contexts, perhaps due to difficulty finding an agreed-upon understanding of the concept. (e.g., Day & Qing, 2009). Reflecting on the concept's "shifting set of meanings" (p.1), Ereaut and Whiting (2008) comment, "Effectively, well-being acts like a cultural mirage: it looks like a solid construct, but when we approach it, it fragments or disappears" (p.5). In this paper, the concept of well-being follows Aeltermann et al.'s definition (2007, p.2), that highlights the dynamic interrelationship between personal and professional relationships, school culture, and the teacher's well-being. They described it as the "harmony between the sum of specific environmental factors on the one hand, and the personal needs and expectations of teachers on the other." This definition highlights the dynamic interrelationship between personal and professional relationships, school culture, and the teacher's well-being.

A lack of well-being among new teachers is linked with a variety of problems, including a high level of stress (Harmsen et al., 2018; Kutsyuruba et al., 2019). Harmsen et al. (2018) distinguish between causes and responses to stress. Several factors contribute to the stress that new teachers' experience (e.g., Geiger & Pivovarov, 2018; Gourneau, 2014; Morris & Morris, 2013; Rodgers & Skelton, 2014). Beginning teachers, for example, often feel overwhelmed by the workload. They are expected to fulfill the same obligations and responsibilities as veteran teachers while adapting to their new roles and responsibilities (Kutsyuruba et al., 2019). Unfortunately, less experienced teachers are often assigned the most challenging and lower-performing students or are assigned to schools with poor working conditions and limited resources (Rodgers & Skelton, 2014). Additionally, pressures of federal, state, and district accountability policies, along with mandated tests, add to novice teachers' stressors (Martinez, 2012; Saeki et al., 2018).

Responses to Stress. Research findings associate feelings of stress among new teachers with feelings of loneliness, unhappiness, anxiety, anger, self-doubt, and depression (Sharplin et al., 2010). Beginning teachers frequently describe themselves as exhausted and drained due to stressful work conditions (Goldhaber & Cowan, 2014; Hartney, 2016; Ingersoll, 2012). Stressful situations among new teachers may negatively impact their relationships with students and colleagues and their sense of self-efficacy (Sterrett et al., 2011). These responses often lead to a high rate of absenteeism and an increased probability of burnout and turnover (Leroux & Theoret, 2014, Martinez, 2012).

Teacher Resilience. Despite these difficulties and challenges, many early career teachers remain committed to their profession (Kutsyuruba et al., 2019; Johnson et al., 2014) due to high resilience. Studies on resilience often center on personal strengths and strategies to overcome challenging situations (Klassen et al., 2018; Pearce & Morrison, 2011). On the other hand, Johnson et al. (2014) assert that this explanation for what we term as a teacher's ill-being ignores elements beyond the control of novice teachers (Margolis, Hodge & Alexandrou, 2014). From this perspective, resilience is a dynamic and multidimensional process involving "a complex interplay between the individual, relational and contextual conditions" (Johnson et al. 2014, p. 533). Jordan (2006) believes that responsive relationships and supportive school culture are more likely sources of resilience and well-being.

#### The Influence of Relational Factors on the Well-Being of New Teachers

Johnson et al. (2014) contend that "Teaching is first and foremost about relationships" (p.542). The centrality of relationships for teachers, explains Hargreaves (2001), is rooted in the teaching profession's emotional nature, or as he describes it, the 'emotional geographies' of teachers. Relationships constitute the most significant factor in enhancing or obstructing teacher well-being. It includes a sense of belonging, social connection, and acceptance by the school community. "Feeling good about oneself," explains Jordan (2006), "depends a lot on how others treat one and whether one can be authentic and seen and heard in relationship with important others" (p. 81). The role of relationships with students, colleagues, and school leadership will be considered next. Good relationships with students have been deemed the most significant factor for new teachers' personal and professional well-being (Hargreaves, 2001; Turner & Thielking, 2019). The value of relationships with students is not surprising, considering that the joy of working with children is a primary reason they chose to enter the teaching profession (Le Cornu, 2013).

As McNally and Blake (2009) postulate, positive relationships with students contribute to increased self-esteem among novice teachers. Having good relationships with students is essential but often hard to establish. The difficulty in forming positive relationships with pupils is often linked to ill-being, stress, burnout, and attrition among new teachers (Ross, Romer & Horner, 2012). Split et al. (2011) assert that new teachers often feel vulnerable, lonely, isolated, and frustrated as they deal with challenging behavior issues and feel they are on their own in dealing with them.

New teachers seek wisdom and support from their colleagues. Positive relationships with colleagues can defuse their sense of vulnerability and isolation (Kutsyuruba et al., 2019). Research by some (Johnson et al., 2014; Le Cornu, 2013) reveals that new teachers who can establish trusting, respectful, and enriching relationships with colleagues feel more confident and competent in their new careers. Such robust relationships foster a sense of connectedness, belonging, and commitment (Johnson et al., 2014).



Le Cornu (2014) emphasizes that for relationships to be effective, they work best when they are reciprocal. Beginning teachers should not just be passive recipients of guidance but also feel their ideas are welcome and valued. Veteran teachers are looked to as colleagues who willingly "provide an opportunity to participate in a relationship that is growth-fostering" (Jordan et al., 2006, p. 880).

### Relationships with School Administrators

When a school leader takes the time to attend to the needs of new teachers by developing support, trust, and respect, novice teachers' initial experiences are more successful and less stressful (Le Carnu, 2013; Laster, 2016; Northouse, 2015). The presence or absence of emotional support has a strong and lasting impact on early career teachers (Gallant & Riley, 2015). When Gallant and Riley interviewed novice teachers who left classroom teaching within the first five years, they found that many attribute this to a perceived lack of emotional support they received from school administrators. The lack of such support led to feelings of isolation and low self-esteem that significantly contributed to their desire to leave teaching.

School leaders need to clearly communicate that they value new teachers and not discount the value of their contributions. As Jordan (2006) asserts, "To enjoy authentic and growth-fostering interactions, one cannot be in a position of subordination" (p.82). Additionally, Le Cornue (2013) emphasizes the vital role of school leaders in creating a school culture built on collaborative relationships in ensuring professional growth among early career teachers. School leaders set the conditions for the success of novice teachers by encouraging the formation of learning communities to foster collaboration and a sense of belonging within the school environment (Cohen et al., 2009; Kutsyuruba et al., 2019; Gallant & Ridley, 2014). As these researchers point out, school culture permeates many of the daily interactions and events of a school. Cohen et al., (2009) define school culture as "the quality and character of school life" (p.182). Johnson et al. (2014) refer to school culture as the beliefs, values, goals, interpersonal relationships, and organizational structure that distinguish the school's daily ritual. Positive school culture is often associated with an emotionally supportive professional environment (Gallant & Riley, 2014).

Researchers (e.g., Day & Gu, 2007; Johnson et al., 2014) highlight the necessity of creating a collaborative learning culture to enhance the well-being and efficacy of early career teachers. An example of such a collaborative culture is when new teachers enter into a support system for planning and development through school-based professional learning communities (McCallum & Price, 2016; Owen, 2016). These communities promote reflective participation and critical examination of beliefs and practices (Johnson et al., 2014).

In contrast, a negative school culture can have an adverse effect on beginning teachers. In one study, Gallant & Ridley (2014) found that early career teachers who left a school reported feeling unwelcome and unsupported by the school community. They concluded that a negative school culture caused these teachers to feel inadequate and out of place.

### The Influence of Mentoring Programs on Well-Being

One of the most tangible sources of building a supportive culture is the use of meaningful mentoring (Ingersoll & Strong, 2011). Mentorship plays an essential role in acclimating novice teachers into new educational settings (Irby et al., 2017). Mentors often help new teachers socialize in the teaching environment (Phillips,

2007), resulting in an increased sense of self-efficacy and control (Sharplin et al., 2010).

Successful mentoring programs work best when there are well-planned matches between teachers (Kutsyuruba et al., 2019) based on similar content areas and availability (Ingersoll & Kralik, 2004). While much research on mentoring centers on formal structures and outcomes, Squires (2019) proposes an approach that recognizes the value of informal personal relationships between mentors and mentees. Whether pre-planned or more spontaneous in nature, a successful relationship allows for a foundation of trust to develop between novice and veteran educators. Establishing and maintaining trust is one of the most important elements in meaningful mentoring relationships (Efron, Winter & Bressman, 2013).

This review of the literature presents relational and contextual aspects of teacher well-being. It provides a foundational framework for understanding the role of relationships, school organization, and culture in support of new teachers. Our study focuses on the lived experiences of teachers as they begin their careers. We listened to stories about their relationships with students, colleagues, and principals and learned about the support they received while entering into their new profession. Three research questions were of interest and guided our inquiry:

1. What are the major influences that impact a sense of well-being among early career teachers?
2. What is the role of formal and informal relationships in supporting the well-being of early career teachers?
3. How do school culture and organization affect the well-being of early career teachers?

### Research Design

Our study of the well-being of new teachers took place during the 2020-2021 academic year and utilized an interpretive-qualitative design. The qualitative-narrative research design allowed us to focus on the participants' subjective interpretation of their own well-being and to describe the factors that contribute to or detract from it (Creswell, 2019; Marshall & Rossman, 2015).

This section describes the context of our study, participants, data collection tools, and analysis methods employed. We conclude with a presentation of the ethical considerations, validity, and trustworthiness of the study. To gather necessary data, in May 2020, we sent a request to 350 alumni from a private Midwestern university teacher preparation program, inviting them to participate in a study focusing on the well-being of new teachers. The teacher preparation unit at the university is comprised of graduate-level programs leading to initial licensure in Early Childhood, Elementary, Middle Grades, Secondary and Special Education. The alumni were identified as program completers from 2015-2019 who would be in their first to fifth years of teaching. In June 2020, thirty beginning teachers responded to the request and completed a questionnaire, with ten volunteering to participate in in-depth interviews. All respondents provided their written consent to participate in the study in accordance with the university's Institutional Review Board guidelines.

Of the 30 respondents, 80 percent identified as female and 20 percent as male. Twenty percent of the teachers had one to two years of teaching experience, and 49 percent reported they were in their third or fourth year in the classroom. The remaining 31 percent of the respondents were in their fifth year of teaching. Eleven of the teachers taught in Pre-K to grade two, and another eleven were currently teaching in fourth or fifth-grade classrooms. Eight of the teachers taught a variety of content area subjects in grades 6-8, including STEM, English Language Arts, and Math. Of the thirty respondents, five taught special education, four were dual

language teachers, two taught world languages, two taught enrichment or special subject areas, and the rest classified themselves as general education teachers in grades 3-6.

The final question on the survey asked the respondents if they would be interested in participating in a one-hour video interview for a conversation based on the questions asked in the survey. The ten teachers who volunteered represented a general cross-section of the respondents, and all were interviewed.

To learn about the experiences of the participants, we used research methods that allowed us to comprehend their perspectives and understand the factors that impacted their well-being (Creswell, 2019; Marshall, Rossman & Blanco, 2021). A qualitative online-administrated questionnaire included 11 open-ended questions followed by a comment field where the respondents were asked to record and explain their responses. Follow-up interviews were conducted via Zoom video conferencing with each one lasting between 45-60 minutes and were electronically transcribed. The interview questions grew out of issues highlighted in the questionnaire and we encouraged the novice educators "to co-construct the narrative" (Efron & Ravid, 2020, p. 103) as we probed gently with follow-up questions to generate thoughtful responses.

We immersed ourselves in the collected data to make sense of the information gained from questionnaires and interviews. Using a descriptive coding strategy, we employed a manual data coding process (Leavy, 2017). This process allowed categories of meaning expressed by the participants to emerge, and then we sorted them by themes and patterns that showed commonality (Creswell, 2019; Hess-Biber, 2017). Next, we applied an integrative interpretation and considered how the emergent trends, patterns, and themes were related and linked to one another in order to create a coherent story (Marshall & Rossman, 2015). For ethical considerations, we obtained informed consent from the teachers who participated in this study. In order to ensure confidentiality and privacy, we have concealed names, schools, or other identifying information (Mertler, 2017).

### Data Analysis and Interpretation

The analysis of the early career teachers' responses to the surveys and follow-up interviews is organized around the major themes we identified. The themes speak to perceptions of well-being, stress and resilience, relationships in school, school culture, and mentoring. We began our study by asking participants to define the meaning of well-being based on their own experiences. From our interviews, we would suggest that the definitions offered by our participants about this concept can be divided into two facets: professional well-being and personal well-being.

Support from colleagues and administrators was highlighted by participants as a critical factor in promoting their professional well-being. David, a fifth-grade teacher, finishing his first year in the classroom, emphasized: "The well-being of teachers should include being given support from school personnel as well as having expectations that the administrators clearly define." Well-being, David asserted, "is an emotional state; it is the emotional sense that teachers feel secure and supported."

Diane, a first-year social studies teacher, highlighted the importance of feeling a sense of belonging and acceptance by colleagues and administrators as contributing factors in her professional well-being. Along the same line, John, a third-grade teacher, confirmed that-relationships built on trust and respect were the most crucial influences for him. He stated, "Teachers need to feel that they have the space to be creative and to take risks in learning something new."

The other repeating theme we identified from participants was, as Patricia, a third-year teacher, explained, "Well-being on a personal level means having a work-life balance." Many others echoed this sentiment as Yasmin, a first-year second-grade teacher, shared:

At this stage in my life - I'm married, a homeowner, and have children of my own - a work-life balance is crucial to my well-being. I absolutely love my job, but if my family's well-being is sacrificed, my wellbeing as a teacher suffers.

### Stories of Stress and Resilience

Once we heard how new teachers viewed the meaning of well-being, we asked them to reflect on their first year of teaching. The majority of the teachers shared their feelings of enthusiasm, high hopes, and anticipation when they first entered the classroom. Gayle explained, "I felt confident about my abilities to handle whatever is thrown my way." For Helen, there was a sense of excitement and apprehension. She remembered: "I felt an overwhelming need to succeed. I had an obligation to my students who depend on me."

Others also used the term "overwhelmed" when reflecting on their feelings during their first days of teaching. They associated this term with the uncertainties and self-doubts they felt. Maria remembers, "I was utterly overwhelmed. I was like, oh boy; I should be doing that, that, and that." Many spoke of their anxious "sleepless nights," or as Yasmin, who, after years of subbing, had a class of her own, summarized, "Stress is just part of being a first-year teacher!"

The causes of stress identified by these early career teachers varied. Among them was difficulty in managing time and taking on too many responsibilities. A first-year social studies teacher remembered, "I didn't manage my time well. I began to take on more and more until I realized that I could not do all these things well; I was wasting energy I did not have."

An area of frustration expressed by some was a sense or feeling that new teachers should not share their struggles or uncertainties with others. Patricia revealed: "I felt like you do not share your fears and failures. Admitting such fears was seen as a sign of weakness that would be held against me."

Still, most of the novice teachers in our study exhibited various levels of resilience. They survived the hurdles and stresses of the first year and, when necessary, found ways to rebound from a sense of professional insecurity or dissatisfaction. They learned to adjust or prioritize what they did, as Yasmin stated, "I learned to pull away and get time for myself." Another teacher explained the importance of first "building relationships with students and setting the class routine." As she reflected, "everything else kind of follows."

Several participants changed schools during their early years, and these moves seemed to improve their sense of well-being. Monica, for example, went from a large public school in an inner-city neighborhood to a smaller public school district. Now, she explained, "I can really have a voice for the kids and the school" and "make more things happen." Another teacher who moved from one school with limited resources and, in her opinion, ineffective administrators changed to a school with "tons of curriculum resources" and was invited to collaborate with veteran teachers who shared resources and advice. Here she found an environment where she could thrive.

### Relationships in School: Impact on Well-Being

Relationships with students, colleagues, and administrators greatly influenced the wellbeing of the new teachers who participated in the study. The following sections

present our analysis of these relationships and describe how they contributed to or detracted from maintaining a sense of well-being. Most of the new teachers explained that their relationships with their students greatly influenced their professional satisfaction and had a lasting positive or, conversely, negative impact on their well-being. The weight given to these relationships reflects why many chose to enter the teaching profession. For example, in his fourth year in the practice, David a third-grade teacher stated, "My students are the reason for my job. They have 110 percent impact on what I do."

On the negative side, behavior issues can take a toll on beginning teachers. One second-grade teacher expressed that her students were a huge negative factor. "I was not prepared for how much challenging behaviors would impact my and the students' well-being." A middle school ELA in her second-year teacher shared:

Man, students often are the ones that take the toll on your well-being.

Difficult behavior, apathy for work, etc., are the energy drains. You have to focus on the bright spots of your day to maintain your well-being and not to feel like you are not riding a roller coaster throughout the day.

When considering the relationships with their school colleagues, several highlighted the importance of developing a sense of camaraderie with peers. Acceptance from veteran colleagues can enhance a sense of feeling professionally grounded and confident. An elementary bilingual teacher said the following about her colleagues, "The biggest thing, honestly, is having a team that you can talk to, and you know that they're not going to judge you or criticize you; they just listen and kind of commiserate with you." Moreover, Diane, a 4<sup>th</sup>-grade teacher, emphasized the value of being accepted and respected by colleagues. "It means you're being seen and you're being heard. Your voice is valued."

**Relationships with School Administrators.** According to about half of our participants, school principals often had a positive impact on their well-being. For these teachers, support from their administrators made a vital difference. Still, just as many of our respondents felt abandoned and unsupported by their administrators.

A special education teacher in her third year of teaching explained, "Good administrators make a world of difference." One elementary teacher expressed appreciation by stating, "My administrative team is exquisite! They are always available to help and understand the challenges of being a first-year teacher."

Help for new teachers from administrators can take many forms depending on the needs and specific situation of each teacher. For example, one third-grade teacher finishing her first year reported:

I felt supported by my administration. They were present and supportive when dealing with parents, provided additional time and resources to help with the overwhelming task of grading and entering grades, and problem-solving with issues around difficult situations with students.

### School Culture and Organization: Impact on Well-Being

Our study demonstrates the critical role school leaders play in setting the conditions for the success of novice teachers by encouraging a sense of community, fostering collaboration, and a feeling of belonging. The new teachers in our study spoke candidly about how school culture affected them and their well-being. While some talked about a friendly and collaborative school environment, others spoke about not feeling welcomed or supported, which negatively affected their confidence.

Teachers in our study often linked positive school culture with increased levels of well-being. One participant spoke for many as she expressed her appreciation for being welcomed and feeling part of a culture of collaboration.

There is a beautiful safety net in the school. They make me feel that I am an asset to the school and have something to contribute. Our special education team is strong, and I feel comfortable texting and talking to the director of special education whenever I think her opinion will help me.

In contrast, a hostile school climate may cause teachers to feel a sense of ill-being. Several participants said they felt unsupported by the school culture when for example, veteran teachers, were unwilling to share meaningful suggestions and resources. Some highlighted how school tensions and a sense of competition colored their experience. One of the teachers described the "unspoken" culture at her school:

It is a very competitive environment where teachers don't want to share good material with you. They want to keep it to themselves and show how much better they are. There are unspoken rules to teaching. I don't know how somebody knows those unspoken rules, but they are there. You do not share your weakness. You do not go to the principal and tell her, "I am struggling with my reading workshop. I am not really sure how to teach it." This is a no, no. You do not share your frustrations with your colleagues or principal. You keep them to yourself.

The essence of school culture is communicated in many subtle but important ways. When teachers think others aren't accepting or valuing their work, they are left feeling adrift and disconnected. A positive reception, however, is richly appreciated and valued in career-affirming ways.

Mentoring was identified as the most common and highly valued source of support cited by the beginning teachers. While most mentoring occurred under formally established school-based induction programs, some of the matches were more ad-hoc. Mentoring, as evidenced through our interviews, serves two distinct purposes: pedagogical support for beginning teachers and an-emotional safety net as these teachers acclimate to life in school.

The kinds of pedagogical mentoring reported as most helpful included: instructional coaching, support from co-teachers regarding pedagogy and instructional materials, grade-level meetings with colleagues, and weekly or monthly check-ins with mentors around questions of practice, curriculum, and record-keeping. As one teacher pointed out:

This district has all these rules and regulations, and sometimes you ask questions, and you just get told to read the rulebook. I just want to understand how all these work for my students. It was nice to have someone who could spend enough time giving me recommendations tailored to my students.

Most importantly, mentors also helped new teachers keep a healthy perspective on the nature of their work, helping them prioritize and learn how to establish a healthy work-life balance. One new teacher reflected:

My mentor helped me try not to do everything at once. That was a big hindrance at the beginning, thinking that I needed to be perfect and everything needed to be amazing

### Findings and Implications

The early career teachers in our study openly shared various sources of stress and the uncertainties they faced as they entered the teaching profession. Analyzing and synthesizing their perspectives led to a variety of important findings aligned with the three research questions that guided our study. Although this was a small scale study, we believe that our findings have meaningful and wide-reaching implications for creating an environment that both welcomes and recognizes the needs of those

new to the school community. We present our research questions followed by our related findings in a format that highlights our participants' viewpoints.

### Question 1: What Major Influences Support New Teachers' Sense of Well-Being?

The most important influences on a new teacher's sense of well-being, first and foremost, includes receiving emotional and pedagogical support from administrators and trusted colleagues especially when facing challenging and stressful situations. Along with this, is the desire to receive clear communication, guidelines, and policies from both administrators and colleagues, alike. The new teachers in our study also stressed the importance of having access to instructional resources to help them when navigating curriculum content and lesson planning. With resources in hand, the new teachers also desire to have opportunities to bring their own creativity and risk-taking to their teaching. They want to feel that they are able to bring engaging and fun approaches to teaching and learning.

As members of a school community, these new teachers also want to feel respected and valued as contributing participants in the school team. Lastly, they spoke candidly about the need to achieve a work-life balance as a condition for achieving a sense of well-being in and out of school.

### Question 2: What is the Role of Formal and Informal Relationships in Supporting the Well-Being of Early Career Teachers?

The role of relationships in school settings and their impact on a new teacher's well-being are actualized through relationship building. Relationships with students helps the teachers form important bonds with those in their classroom; this in turn, provides them with a sense of fulfillment, purpose, and resilience. These bonds often lead to positive student behaviors and helps to promote a sense of classroom community. Building these meaningful relationships, they remind us, is the very reason they chose to enter the teaching profession.

Relationships with colleagues and administrators is also very meaningful to new teachers. They tell us that having supportive colleagues who serve as critical friends and thought partners is indispensable and leads to a sense of professional satisfaction. Likewise, the relationships with administrators built on accessibility and a willingness to help the teachers navigate the unique first years' challenges is essential. Administrators, like colleagues, need to be willing to participate in problem-solving when required. After all, new teachers need to have experienced guides on the side to help them through their early days when they are still building their confidence and capabilities in the classroom.

### Question 3: How do School Culture and Organization Affect the Well-Being of Early Career Teachers?

Helping new teachers adjust to life in schools can be viewed through the lens of school culture and organization. Forming a welcoming school culture for new teachers is key to creating a strong sense of well-being. This requires a collaborative learning culture that enhances each new teachers' professional participation and a sense of belonging to the larger school community. Most importantly, mentoring must be part of the induction of new educators as they acclimate to the job. Mentoring provides personalized professional development and affords access to others who can offer the voice of experience and non-judgmental guidance, support, and validation.

Through the reflections of our study's participants, we learned a great deal about what matters most in developing a sense of well-being among new teachers. Our findings indicate that the three most important aspects of promoting new teacher

well-being stem from the following: relationships formed with students, colleagues, and administrators; a welcoming culture and collaborative school environment where professional learning opportunities abound; and the existence of a well-designed mentoring program. When attention is given to these three areas, school leaders can pave the way for early career teachers to find their professional footing and successfully adjust to the varied responsibilities associated with their new positions.

### Final Thoughts

Fresh from getting their professional license and newly responsible for their own classrooms, teachers face multiple challenges as they seek to do well during their first years on the job. The degree of satisfaction and well-being gained by early career teachers can determine whether they will mature into successful veterans.

Well-being is not determined from a predictable specific set of components, rather, it is a blend of perceptions based on the particular needs of teachers as they seek a sense of satisfaction, happiness, accomplishment, and purpose. Providing necessary support is even more essential during times of heightened stress and health emergencies such as the recent Covid-19 pandemic and its aftermath. Without supporting the well-being of early career teachers, we are likely to see increasing numbers abandon their recently-chosen profession. Foreman-Peck (2013, p. 9) stated: "One could argue that lack of wellbeing is a cause of attrition, rather than lack of perseverance or motivation." We are reminded that well-being needs to be understood as critical factor in keeping teachers professionally fulfilled and committed to life in the classroom.

As we continue to face rising attrition rates and an escalating teacher shortage, it is time to prioritize well-being as an overall indicator of teacher and school effectiveness, career longevity, and school stability. Today's school leaders are well served to be mindful of the essential roles that positive relationships, school culture and mentoring play in helping those entering the profession as beginning teachers navigate their new responsibilities. More than ever, the well-being of new teachers needs to be valued as an essential cornerstone in designing a healthy educational future.

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*Review of Criminology Explains School Bullying,*  
by Robert A. Brooks and Jeffrey W. Cohen, 2020.  
Oakland, CA: University of California Press, paper, 159 pages.  
Review by Thomas Hansen

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As educators, professional development presenters, and teacher educators, we need to consider another important perspective on bullying and those who bully others. The field of criminology gives us a very different look at the topic. There are many people in fields other than education who feel that teachers, school district administrators, school board members and others have looked at bullying as being a quirk, a somewhat juvenile and therefore not serious issue, and even an almost expected byproduct of the stress of coming of age—sort of something we should not be that alarmed to see occur.

This book shows us a rather different view. Professionals in criminology want educators and others to think of bullies as criminals, consider the bullying to be a serious crime, and think about the longer-term implications of ignoring or playing down the possible damage of the bullying. However, the experts writing this book remind us there is a crime that is being committed. “Bullycides” and the like are the result of criminal activity, according to this point of view.

Young people who bully their peers are the type of individuals who go on to commit murder. The statistics and other information in criminology can show this to be the case. Looking at the bullies as criminals is a great departure from the usual mindset often adopted by educators. We want to help. We want to cover up occurrences of bullying. We want to protect the bullies—and the victims.

However, in criminology, protecting the bully is not the approach recommended. Helping them is important, yes, but looking at the causes of the bullying, holding the bully responsible, and assisting them to go down the right road in the future (one free of crimes) should be the sorts of focus adopted by professionals in education and other endeavors.

What should we in the education field think of bullying? We know it is important to report it, avoid it, try to prevent it, and provide resources to help both the person committing the act(s) and the person being impacted. In this book, the experts look at the bully through the lens of Piaget, Kohlberg, and those who study psychopathology. These experts outline some very interesting theories on why bullies do what they do. And the experts make the point that most of the research on bullying shows “isolated” occurrences of the bullying—without the essential longer-term study that needs to be done.

The point is that youngsters—or college-age students—do not “suddenly” bully others. It seems more likely to be the case that the perpetrator has this activity as part of their complete development... perhaps at certain stage(s) and perhaps somewhat predictable given their background, environment, and/or stress dealing with changes and new stages of life. All of these perspectives and competing theories come into play in virtually ALL aspects of secondary and college students’ stages and hurdles.

As educators, we have read many of those studies and theories in classes and perhaps seen a great range of personalities in our students—from high school to teacher candidates and beyond. Perhaps it is time to welcome the criminologists into a conversation where multiple perspectives can be shared and we can all—coming from different fields and endeavors—come to better understand what is behind the

bullying, know how to better deal with it, and provide more broadly-informed views of how to proceed with counseling, development, and assistance.

Again, helping the perpetrator and the victim are two important branches to follow. I recommend all persons attempting to teach, mentor, and counsel students read this book. It is good for one's personal library, yes, but it is also an essential addition to one's professional list of books. It should also be included in more broadly-based discussions of bullying and bullies. This is the case for teacher-education preparation classes, professional development, teacher in-service workshops, and other formal and informal gatherings related to the topics.

This book presents a very different perspective, it is true. However, this is certainly an opportune time to start taking bullying and the problems of bullies more seriously. Cyber bullying has brought these topics out into the media recently, however, all types of bullying need to be discussed. Education needs to interface with the other fields devoted to finding answers and helping others on these topics.