

**CITE**

*Critical Issues in Teacher Education*

**Critical  
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# CRITICAL ISSUES IN TEACHER EDUCATION

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# Preparing Culturally Informed Educators: Theory, Exposure, and Intention

by

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## Abstract

*U.S. demographic patterns underscore the need for educator preparation programs (EPPs) to prepare teacher candidates for increasingly multicultural and multilingual classrooms. Yet culturally informed teaching and learning is prone to oversimplification and not adequately implemented. This paper reviews scholarly explanations for the challenges associated with developing culturally informed educators and presents one EPP's response to these challenges. Integration of a theoretical framework for cultural responsiveness with specific instructional interventions are discussed. Implications include the importance of comprehensive literacy instruction and authentic assessment for cultural responsiveness, the impact of university partnerships with historically underrepresented school districts, and alignment with state mandated culturally responsive teaching and learning (CRTL) standards.*

The U.S. Census Bureau (2023) predicts that by the year 2060 our country's ethnic and racial minority groups combined will constitute the majority of the U.S. population, while an estimated 87% of U.S. elementary and secondary teachers are White (Howlett et al., 2017). These dynamics highlight the need for educator preparation programs (EPPs) to intentionally prepare culturally informed educators for multicultural and multilingual classrooms. Culturally informed educators demonstrate the attitudes and possess the knowledge and skills to seek out understanding of students' unique cultural and academic backgrounds, and they craft instruction that is responsive to local conditions and individual student needs (Derman-Sparks & Edwards, 2021; Muhammad, 2023).

Culturally informed educators also understand the complex social and economic dynamics associated with how out-of-school influences and unearned social class disadvantages impact academic achievement (Berliner, 2013a, 2013b; Garcia & Weiss, 2015). Namely, diverse learners are oftentimes from marginalized communities that are historically underserved by the education system (Compton-Lily et al., 2023). As a result, diverse learners are more likely to attend underfunded schools with uncertified teachers and comparatively restricted resources (Shannon, 2014). For example, English learners are one of our country's fastest growing student populations, yet educators report feeling inadequately prepared or supported to meet their needs, and the number of licensed English learner instructors decreased by over 10 percent between 2018 and 2020 (Najarro, 2023; Wei et al., 2023).

In the absence of culturally informed educators, diverse learners who are most in need of differentiated instruction are the very students most likely to receive standardized curriculum that is not culturally responsive (Reinking et al., 2023). Moreover, absent culturally informed instruction, the mismatch between the norms of home and school that diverse learners oftentimes experience can negatively affect learners' sense of belonging, identity, academic self-efficacy, and ultimately their transition into the larger society (Banks, 2020; Smagorinsky, 2013).

Positionality

Our midwestern teacher education program serves teacher candidates from

backgrounds including rural and suburban areas that are sometimes relatively culturally homogenous. As a result, some of our teacher candidates have limited exposure to communities outside their own racial, ethnic, linguistic, or socioeconomic backgrounds. In these instances, teacher candidates can benefit from intentional support to counter disinterest in, or resistance to, acquiring the dispositions necessary for mastering culturally informed instructional practices (Hambacher et al., 2020; Howlett et al., 2017).

As White college professors of historical and institutional privilege, we also recognize our inherent limitations in nurturing these dispositions. In response, we have prioritized addressing these personal, cultural, and pedagogical challenges by integrating a theoretical framework that acknowledges the deeply complex and historically rooted nature of academic achievement (Avineri et al., 2015; Banks, 2020). Specifically, our EPP integrates sociocultural theory (SCT), opportunity to learn theory (OTL), and the cultural-historical approach into coursework and program goals. Our program extends this theoretical grounding to practicum experiences with diverse learners in school districts historically underrepresented by EPPs. Finally, through this framework we demonstrate a commitment to aligning our curriculum with state mandated *Culturally Responsive Teaching and Learning (CRTL) Standard A. Self-Awareness and Relationships to Others – Culturally responsive teachers and leaders are reflective and gain a deeper understanding of themselves and how they impact others, leading to more cohesive and productive student development as it relates to academic and social-emotional development for all students* (Illinois State Board of Education, n.d.).

#### Literature Review

The challenges we face as White college professors preparing mostly White teacher candidates to accommodate the needs of diverse learners are not unique (Hambacher et al., 2020; Howlett et al., 2017). An ample body of knowledge exists on the difficulties associated with understanding and implementing culturally informed and anti-bias teaching methods (Kendi, 2023; Walker, 2020). Education scholars have repeatedly shown culturally responsive teaching and learning are not well understood or adequately implemented (Kane & Savitz, 2022; Ladson-Billings, 2021). Culturally informed practices are prone to oversimplification, and they are not easily translated to the large-scale, prepackaged curriculum and standardized assessments that schools serving diverse populations commonly rely on to measure and communicate academic achievement (Paulick et al., 2023). Scholarly explanations for this inadequacy are historical, sociological, and pedagogical.

Education scholars find many teachers perceive culture simplistically, for example, believing ethnic holiday celebrations constitute multi-cultural education (Sleeter, 2012). Through this simplistic lens, culture is perceived to be embodied in somewhat static and predictable traits such as dances, food, and folklore. In other words, culture is understood only in so far as it can be readily perceived by the senses, and in ways that can be fun and exciting to adapt to (e.g., consumer goods) (Hammond, 2015). These simplistic perceptions can highlight between group differences while neglecting to recognize within group differences, unspoken cultural norms, and deeply held beliefs that reveal the layered complexities of culture (Pacheco & Gutierrez, 2009). This is problematic because categorizing students based on race, gender, class, or assumptions of cultural traits can reduce individuals to being part of monolithic, and oftentimes ranked, groups (Parks, 2009). Simplistic conceptualizations of culture that embrace surface culture might be well-intended. However, they risk reinforcing racialized narratives, stereotypes, and hierarchical thinking. These patterns can interfere with instructional practices by overshadowing

variable ways of being that need to be recognized to understand the unique needs and affordances of diverse learners (Brown & Brown, 2012; Ladson-Billing, 2021).

### *One-Directional Approaches to School-Community Involvement*

Education scholars also have critiqued the one-directional approach to the way schools have traditionally interacted with families and communities. Traditionally, families have been expected to come to school to seek out what they need to know to adapt to the discourses and routines of school (Gonzalez, 2016; Moll et al., 1992). This approach can perpetuate a deficit view of diverse communities by asserting that families from nondominant cultural backgrounds lack worthwhile knowledge and experiences applicable to school (Gutierrez & Rogoff, 2003; Heath, 1982). Education scholars argue this one-directional approach has replicated the status-quo social hierarchy because schools have not been expected to adapt to the needs of non-elite populations (Avineri et al., 2015; Brion, 2021). This is problematic because without reciprocity, children who depart from cultural, linguistic, and biological norms are inhibited from achieving a sense of belonging and accomplishment in school, and in some cases the larger society (Milner, 2021; Smagorinsky, 2013).

Heath's (1983) seminal study of language socialization examined how schools' traditional approach replicated the status-quo social hierarchy and failed to adapt to the needs of non-elite populations. For example, in Heath's study of three socioeconomically diverse communities, children in high socioeconomic status (SES) communities were observed being socialized through book-oriented, school-like activities of a formal nature (e.g., reading and discussing a bedtime story) (Heath, 1982). These activities prepared students for a relatively seamless transition into the routines of traditional school. By contrast, children in communities of lower SES tended to be socialized through less formal, more orally based, activities that did not provide as seamless a transition into the routines of traditional school. However, Heath (1983) identified myriad ways in which families and communities of lower SES provided multiple means of expression and participation that, if utilized, could be equally useful in academic contexts.

In the same vein of thought, education scholars argue that dominant discourses associated with traditional schooling have perpetuated ideological beliefs that consolidate power and privilege for White, European-American, upper middle-class learners, while creating discourses of achievement regarding nonmainstream learners that foster low expectations and identity perceptions incongruent with academic achievement (Gee, 2014; Carabello, 2014). Folk Belief Theory, for example, purports that low-advantage students are perceived to be unable to master a rigorous curriculum (Torff, 2014). This perception has the effect of suppressing educational outcomes in low-advantage schools by reducing the quality and scope of educational resources and opportunities (Torff & Murphy, 2020). By contrast, cultural difference theory challenges the tradition of viewing disparities in social status and educational achievement exclusively through White, middle-class norms. Cultural difference theory calls for an end to stigmatizing those who do not align with such norms as deviant, abnormal, or inadequate (Brown, 2014; Ogbu, 1995).

Education scholars also have impugned standardization for diminishing multicultural education (Gay, 2013; Shepard, 2016). Psychometric researchers concur that standardized assessments reduce the scope and quality of content, diminish teacher influence, and distance students from active learning, all of which unfairly impact students from nondominant cultural backgrounds (Sleeter, 2012; Loveless, 2018). By test makers' own admission, improved standardized test results do not necessarily demonstrate improved achievement or quality of education (Moss et al., 2005; Kohn, 2015). Using NAEP as an example, psychometric researchers

explain standardized assessments are not designed for causal analysis because results do not account for socioeconomic and other factors influencing performance (Moss et al., 2005). Rather, analysis of NAEP scores should be limited to identification of the jurisdictions within which score divergence is prevalent and where it is not occurring (Carnevale et al., 2019; Wilburn et al., n.d.).

Finally, there is a lack of research explicitly connecting culturally responsive pedagogy to improved achievement (Kelly et al., 2023; Wei et al., 2023). However, scholars contend research is not necessary to demonstrate that cultural responsiveness is effective pedagogy because there are no monocultural groups of people. Even within seemingly homogenous groups of people there exists enormous variability in social class, language, sexual preference, physical ability, among myriad social and individual differences (Gay, 2018; Nieto, 1992). Hence, academic achievement is necessary contextual, interactive, personal, cultural, political, and societal (Nieto, 1992). Furthermore, given increasing global interdependence, culturally informed educators are essential to help diverse learners understand their place in society and prevent a mismatch between the cultures of home and school that can interrupt the socialization process and transition into the larger society (Muhammad, 2023).

### Situating Our Program in the Literature

This research examining culturally informed instruction, in combination with demographic trends, underscore the urgent need to prioritize culturally informed practices in teacher preparation (Banks, 2020). Our EPP has responded to this need by integrating a theoretical framework with instructional interventions that intentionally acknowledge the deeply complex and historically rooted nature of academic achievement in the following ways.

First, our program integrates Sociocultural Theory (SCT) through *comprehensive literacy instruction* and practicum experiences focusing on authentic reading and writing assessments. SCT is based on Vygotsky's constructivist learning theory and emphasizes the social, cultural, and historical contexts in which learning takes place. Put succinctly, SCT contends that just as one cannot live aculturally, one cannot learn aculturally (e.g., see Lantolf & Thorne, 2006; Perry, 2012; Smagorinsky, 2001, 2013; Street, 2013).

SCT is important for culturally informed reading education because it challenges the dominance of some language norms over others. Teachers' awareness of the problematic impact of dominant language norms is crucially important for children from nonmainstream cultures who sometimes enter school before they have mastered the modes and structures of standard, academic English (Gonzalez, 2016; Kramsch, 2009). For example, the ability to clearly organize and analyze in an essay-test format (thesis-antithesis-synthesis) has traditionally been awarded educational value (Gee, 2014). By contrast, the context-embedded and associative forms of language and literacy that children from nonmainstream cultures sometimes bring to school, although equally useful in other domains, have at times been devalued in academic contexts (Heath, 1982). Understanding this distinction is uniquely important for delivering culturally informed reading education because acquisition of standard language norms, or any new set of discourse practices, involves acquiring new identity markers that likely conflict with one's heritage culture (Gee, 2014).

First Instructional Approach - Comprehensive Literacy Instruction. Our program addresses conflict in language norms by preparing teacher candidates to deliver *comprehensive literacy instruction* grounded in SCT within three literacy methods courses. As federally mandated by the Every Student Succeeds Act (ESSA), *comprehensive literacy instruction* reflects SCT through awareness of the ways in which literacy is a social practice involving culture and identity (Perry, 2012).



For example, *comprehensive literacy instruction* is constructivist, individualized, adaptable to diverse learners and learning environments, and locally controlled through teachers' expertise and family involvement (Afflerbach, 2022; ESSA, 2015b). This culturally responsive design is reflected in the requirement of quality instructional resources, attention to student interest, differentiated methods, formative assessment, student progress monitoring, teacher training and planning time, and awareness of family literacy practices (ESSA, 2015b, 2018).

Comprehensive literacy instruction also demonstrates a sociocultural orientation through its shift away from a singular focus on standardized assessments. Rather, multiple means of assessment integrating Universal Design for Learning (UDL) are required to diagnose the needs of diverse learners and English learners, monitor students' progress, and inform instruction (ESSA 2015b, p. 1936). The comprehensive approach prioritizes the instructional needs of students whose literacy skills are below grade level by requiring intensive, supplemental, accelerated, and explicit support (ESSA, 2015b, p. 1942). This requirement prioritizes instruction and assessment rooted in prior knowledge, substantive feedback on ways to improve, and instructional extensions for teaching transfer (Shepard, 2016). Finally, *comprehensive literacy instruction* reflects cultural responsivity by recognizing families as important stakeholders in children's literacy development. Federal funding is provided to coordinate family involvement with school personnel, and to encourage family literacy experiences that support literacy development (ESSA, 2015b, pp. 1941-1942; see also ESSA, 2015a, 2018).

During the first semester of our EPP, the first of three literacy methods classes integrates SCT through *comprehensive literacy instruction* by focusing on speaking and listening about controversial children's literature topics dealing with race, class, and gender. These collaborative, small group exercises serve to familiarize teacher candidates with multicultural children's literature while intentionally developing teacher candidates' active listening skills including paraphrasing, questioning, perception checking, and statements requiring evidence. This collaborative work continues in the literacy coursework that follows and extends into reading and writing assessment practicums with multicultural and multilingual learners in historically underrepresented school districts (see Third Instructional Approach). Ultimately, many teacher candidates refer to the familiarity of the groups they form and reform in this series of courses and practicums as "families" within the large class sizes typical for our university EPP courses.

Comprehensive literacy instruction has timely implications for diverse learners because it integrates culturally informed and non-culturally informed instructional approaches that have defined persistent reading wars (Alexander & Fox, 2019; Cervetti et al., 2020). The comprehensive approach is supported by the corpus of reading research promoting robust, socially just instruction to help students from diverse backgrounds learn to decode, comprehend, apply, and critique text while also nurturing literate dispositions such as reading engagement, motivation, and self-efficacy (e.g., see Afflerbach, 2022; Aukerman & Schuldt, 2021; Castles et al., 2018; Reinking et al., 2023). This approach is important for developing culturally informed educators because it prepares teacher candidates to navigate counterproductive ideological terrain in reading education and deliver individualized, culturally informed literacy instruction. Additionally, our integration of SCT through *comprehensive literacy instruction* aligns our program with *CRTL Standard G. Content Selections in all Curricula – Culturally responsive teachers and leaders intentionally embrace student identities and prioritize representation in the curriculum. In turn, students are not only given a chance to identify with the*

*curriculum, they become exposed to other cultures within their schools and both their local and global communities* (Illinois State Board of Education, n.d.)

Comprehensive literacy instruction introduces teacher candidates to theoretically based, culturally informed pedagogy. However, cultural responsiveness also requires teacher candidates' awareness of the environmental context for learning. To this end, our theoretical framework integrates opportunity to learn theory (OTL). OTL theory proffers that an equitable learning and assessment environment must afford learners similar capacities of action (Gee, 2008). The study of learning, therefore, necessarily involves the study of learners and their environments. In other words, the learner cannot be considered separately from the environment, nor should the learner and the environment be considered distinct factors which can be simply added together to explain development and behavior (Van Der Veer, 2007). Rather, OTL theory contends knowledge and learning incorporate mind, body, and environment in the way individuals think, feel, act, and interact. Individual and environment should be conceptualized as factors that mutually shape each other in a "spiral process of growth" (Bacon & Kaya, 2018, p. 22).

In application, OTL theory requires examination of the ways in which background differences (e.g., socioeconomic, cultural, linguistic) influence what are affordances (e.g., objects, people, features) of a learning environment. According to OTL theory, a culturally informed learning and assessment environment must afford all learners similar capacities of action. In other words, "A learner for whom certain objects, people, or features of the environment are not affordances, either because the learner cannot perceive their possibilities for action or cannot affect that action, is not being exposed to the same environment as is a learner for whom these objects, people, or features are true affordances open to the learner's developed or developing affectivity" (Gee, 2008, p. 82).

OTL theory is particularly timely given our increasingly heterogeneous population. Students' social, cultural, and linguistic backgrounds strongly influence what objects, people, and features of an environment are affordances for learning (Van Der Veer, 2007). In multicultural and multilingual classrooms, cultural responsiveness requires that learners are not assumed to have experienced the same OTL through exposure to the same information in the same setting. To address these potential inequities, teacher candidates must develop awareness that individual students' circumstances are highly variable depending on how the environment has shaped the individual and learn to seek out an understanding of variability in the way objects, people, and environmental features afford their students opportunities to learn (Hammond, 2015).

To expose teacher candidates to variations in OTL, our EPP has embedded content specific practicum experiences that begin with coursework and transition into partnership schools that are historically underrepresented by EPPs. These practicums require our teacher candidates to extend theoretical grounding and classroom learning in culturally informed instruction to elementary education environments that reveal variations in opportunities to learn. Within these practicums, teacher candidates design and implement hands-on math exercises with extended math conversation, engage in meaningful curriculum and instruction collaboration with peers, and implement and analyze authentic reading and writing comprehension assessments with multicultural and multilingual learners.

**Second Instructional Approach - Math Practicum.** During the first semester of our EPP, candidates are enrolled in an elementary math methods course that introduces the best instructional practices in elementary math methods with a focus on effective communication, high quality feedback, and individualized instruction based on student readiness. To build confidence and fluidity providing instruction

that is student specific, candidates begin practicing methods in math instruction and communication within the college classroom. At the next stage, students practice math instruction and extended conversation in a virtual, digital simulation of an elementary classroom that responds in real time.

These classroom-based experiences provide scaffolded, low-stakes instructional opportunities for candidates to practice adapting to the needs of diverse learners. As a culminating instructional experience in this course, teacher candidates transition from the campus-based classroom and digital simulation experience into a practicum in one of our partnership schools. In this practicum experience, candidates implement self-designed, hands-on math activities with individual learners while the professor serves as an instructional coach. Within these scaffolded experiences, candidates apply student specific best practices such as “math talk” and authentic assessments with multicultural and multilingual learners. Professors closely monitor these exercises, assessments, and student-candidate interactions to ensure anti-bias principles of culturally responsive teaching are affirmed (Derman-Sparks et al., 2020).

These leveled instructional experiences intentionally nurture cultural responsiveness because they bridge candidates’ practical and theoretical learning from the college classroom into real world settings with diverse learners. Consistent with OTL theory, the field-based practicum merges the learner to the environment by providing candidates with opportunities to recognize ways in which students from diverse cultural, linguistic, and socioeconomic backgrounds experience variable opportunities to learn despite exposure to the same information in the same setting. Finally, these instructional experiences align our program with *CRTL Standard B. Systems of Oppression – Culturally responsive teachers and leaders understand that there are systems in our society especially, but not limited to, our school system, that create and reinforce inequities, thereby creating oppressive conditions. Educators work actively against these systems in their everyday roles in educational institutions* (Illinois State Board of Education, n.d.)

Third Instructional Approach - Literacy Practicum. During the second semester of our EPP, teacher candidates combine their practical understanding of *comprehensive literacy instruction* with their metacognitive awareness of SCT and OTL theory by authentically assessing multicultural and multilingual students’ reading and writing. This opportunity occurs in the second of three literacy courses. Here collaborative groups of teacher candidates observe and assess student reading and writing with guidance from professors and school reading specialists. Assessments include qualitative spelling inventories, six-trait evaluation of writing samples, reading records of word identification, and reading records of comprehension and fluency (Gehsman & Templeton, 2022). Professors and cooperating reading specialists closely monitor candidates’ assessment procedures and small group interactions with diverse learners to ensure and affirm anti-bias principles of culturally responsive teaching (Derman-Sparks et al., 2020).

Teacher candidates’ assessment experiences with developing readers mirror the authentic assessment practices developed by Schon (1990), and later by Wiggins, McTighe, and McTighe (1998), which envisioned assessment events as coming to understand, rather than finally evaluate, readers and writers. John Flavell (1976) formally coined teachers’ “metacognitive awareness” of student learning as the critical awareness of one’s own thinking, oneself as a thinker, or any other type of knowledge affecting this self-knowledge. Brown’s (1980) discovery of how reader comprehension strategies are fostered by teacher metacognition about their socio-cultural and learning environment contexts launched a series of teaching studies with powerful learning effect sizes (Bransford, Brown, & Cocking, 2000). These teaching

studies now find a practical home in our EPP, and others like it, to this day (Israel, Bauserman, & Block, 2005; Fang, 2023). Additionally, this literacy practicum experience further aligns our program with *CRTL Standard D. Students as Co-Creators – Culturally responsive teachers and leaders who fundamentally believe all students are capable center learning around students’ experiences and position them as co-creators, with emphasis on prioritizing historically marginalized students* (Illinois State Board of Education, n.d.)

The cultural-historical approach to the study of cultural variation in learning represents the next phase of our program’s aim to prepare culturally informed educators. This approach will expand our theoretical framework from the pedagogical (SCT) and environmental (OTL) domains into the societal domain. The cultural-historical approach resists conflating ethnicity with culture, and it discourages assumptions about the sameness of individuals within groups (“trait theory”) (Gutierrez & Rogoff, 2003; Pacheco & Gutierrez, 2009). Importantly, resistance to these assumptions interrupts reductive notions about cultural groups that are commonplace in education discourse, such as the idea that group members carry cultural traits within themselves, or that students have predictable learning styles associated with their cultural groups (Gutierrez & Rogoff, 2003; Pacheco & Gutierrez, 2009). Like Dewey’s (1938) admonishment of binaries, this understanding of cultural variation acknowledges that while we naturally expect regularities in cultural communities, we must also expect variation in the way individual group members participate in activities and lived experiences within the group. This understanding challenges educators to take a Freireian (1990) approach, learning about, from, and with their students, particularly when students are from groups having histories and communities less familiar to us.

The cultural-historical approach will challenge teacher candidates to understand cultural variation in learning by becoming mini anthropologists, exploring the lived contexts of students, families, and communities (Moll et al., 1992). In this way, our program supports culturally informed, anti-bias relational practices that replace one-directional relationships reminiscent of traditional schooling with reciprocal relationships in which families have opportunities to learn from schools, and schools have opportunities to learn from families (Gonzalez, 2016). We aim to improve candidates’ ability to sensitively navigate cross-cultural relationships. We also aim to address a gap identified in our candidates’ opportunities to demonstrate effective communication with parents. Finally, the cultural-historical approach will seek to align our program with *CRTL Standard F. Family and Community Collaboration – Culturally responsive teachers and leaders will partner with families and communities to build rapport, form collaborative and mutual relationships, and engage in effective cross-cultural communication* (Illinois State Board of Education, n.d.)

## Conclusion

The theoretical framework and instructional interventions presented here offer one EPP’s intentional approach to preparing educators who understand teaching and learning as complex, dynamic, and rooted in the lived contexts and practices of students, families, and communities (Avineri et al., 2015). As we continue developing culturally responsive curriculum and instruction, our program’s first efforts will be to seek further guidance from culturally responsive teaching and leading standards. The wide variety of such standards (Illinois State Board of Education, n.d.) should help us map a teacher education curriculum that intentionally empowers all students.

We also need to integrate cultural-historical methods into our course work. Our teacher candidates need to teach the cultural variation and history of our local school communities. They need to design disciplinary lessons that question these stories. This approach to anti-bias education should improve candidates' ability to sensitively navigate cross-cultural relationships with students, families, and communities, and this successful navigation should be systematically evaluated.

Finally, we need to do the work of proactively strengthening partnerships with schools historically underrepresented by EPPs. Schools of need should be our schools indeed. Lower performing schools of need should attract our faculty and candidates in ways that improve curriculum and instruction. Higher performing schools of need should become gems that empowered faculty and candidates refer to as they become leaders in the next generation of school reform (Goodwin, 2020).

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Developing AI Robots for Students with Autism: Augmenting Teachers' Ability to Proactively Intervene Before a Behavioral Meltdown Occurs

by

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Abstract

*Researchers are still learning about the negative effects of COVID-19. Reacting to social emotional deficits among school-age children instead of teaching academics is the new norm for teachers. The rate teachers are leaving the profession is sounding alarms worldwide. This multidisciplinary project aims to reduce inappropriate behavior among school-age children, beginning with students who are most vulnerable – students with autism. Using Social Assistive Robots to help teach children with autism is widespread in the literature. This project will design and build a Social Assistive Robot with Artificial Intelligence. We will use the robot to intervene and engage the student, offering behavioral alternatives, thereby reducing the amount of time teachers spend reacting to inappropriate behavior and more time teaching academics. We discuss the need, summarize the use of robots in education and how our robot is different, then conclude with a call for future research using robots within the classroom.*

Global Post-COVID data reported an exponential increase of mental health and behavior-related challenges, especially among children Pre-Kindergarten through high school. Among those at a higher risk are individuals with Autism Spectrum Disorder (ASD). During the pandemic, social interactions and daily routines were disrupted. Students with ASD typically struggle with communication, social interaction and disruptions to daily living routines. Within the classroom, students with and without disabilities were negatively impacted, both socially and academically. Data indicates there is less focus on teaching academics and more focus on reactively responding to aggressive and violent behavior among students with and without disabilities. The growing shortage of teachers worldwide increased post-pandemic as well. The combination of the increase of behavioral challenges, disruptions of school routines and the shortage of teachers sounded global alarms for the need for immediate behavioral interventions. While negative impacts in the aftermath of the pandemic are still being discovered, teachers need innovative ways to help offset the increase of aggressive and violent behavior among all students. Current statistics show the rate of ASD increased 241 percent since 2000. Today's prevalence of ASD reports one in 36 children are identified with ASD (Maenner, Warren, Williams, et al., 2020).

A look at the data yields a more intense need for interventions than what could have been imagined among school districts pre-Covid. For instance, aggressive and violent outbursts are not exclusive of one population or another, with or without disabilities. Across environments, the U.S. Department of Education (2023) reported over 80 percent of public schools have experienced an increase of behavioral challenges among students. The following are some of the challenges that were most often reported, including but not limited to: disruptions to classroom learning as a result of student misconduct (56 percent), disrespect (48 percent), excessive use of electronic devices (42 percent), as well as an increase of chronic

absenteeism (72 percent). All public schools reported an increase of behavior that was directed toward students, including the following more frequently reported behavior: physical attacks or fights (32 percent), threats of physical attacks or fights (35 percent), hate crimes (6 percent), and bullying (30 percent). An increase of aggressive and violent behavior directed toward teachers, staff, or related service providers include the following frequently identified behavior: threats to injure (13 percent), physical attacks (11 percent), verbal abuse (36 percent), and acts of disrespect, beyond verbal abuse (48 percent) (U.S. Department of Education, 2022).

Another challenge that plagued school districts prior to COVID was the shortage of classroom teachers, substitute teachers, and paraeducators. This challenge was exacerbated post-COVID. Paraeducators are typically not licensed teachers, although some districts employ retired teachers to help fill the role of a classroom aide. Similar to finding substitute teachers, hiring a classroom aide, licensed or not, is next to impossible. If school districts are lucky enough to hire a teacher, paraeducator or substitute, school districts often fail to keep the new hire. Thus, the hiring cycle becomes a revolving door for school districts. Schools hire virtually anyone who is willing to accept the position, with the new hire thinking, 'How hard could this be?'. But then, within a day, week, or month, after experiencing the reality of the aforementioned social and or emotional challenges, the new hire leaves, without notice, and sometimes walks out during the middle of a school day and does not return.

To help offset the teacher shortage, schools are being more creative in how they cover classes without a licensed instructor. These alternatives include assigning current teachers to cover in-need classrooms during their free period (or prep and planning time), reassigning staff members, and dispersing administrators who are in between work responsibilities. Data reported by school districts include the following creative (desperate) attempts to cover classrooms without a teacher: administrators (75 percent), non-teaching staff (e.g., custodians, lunchroom staff, counselors) (71 percent), reassigned licensed teachers during their prep/planning periods (rotating through multiple teachers, numerous times throughout the day), regardless of their discipline or grade level) (67 percent), combined classes or split classes without a teacher among two others, regardless of grade, ability or discipline (51 percent), and 9 percent reported they used other methods to cover classes (i.e., recruiting international teachers to teach in US schools) (U.S. Department of Education, 2022).

The combination of inconsistency and impromptu changes to daily routines and environments, along with unfamiliar interactions involving unfamiliar individuals, negatively impacts students in both the general education and the special education environments. For vulnerable populations who are predisposed to challenges related to social emotional regulation, such as those with ASD, this type of inconsistency increases the likelihood of inappropriate behavioral responses (Davis, 2023; Pierce, 2023). These elements create the perfect storm.

While the shortage of teachers unwilling and ill-equipped to meet the needs of students in a post-pandemic society increases, so does the gap between students' readiness and their academic success. Students need to be taught how to respond appropriately. Teachers (and other individuals covering classrooms) need innovative, effective, positive resources that supplement their efforts within the classroom using evidence-based methodology. Resources need to harness today's technology, be consistent and predictable, user-friendly, reliable, and interesting and motivating to the student.

### Why Autism Spectrum Disorder

During the pandemic, children missed out on learning opportunities with peers about how to work and play well with each other. Instead, they had to isolate.

Not knowing how to work and play well with others and not knowing how to respond, or react appropriately when things do not go as expected, are triggers to spontaneous inappropriate student reactions. The teacher must stop teaching to react to the inappropriate behavior. Everyone misses out, thus contributing to the increasing gap between student readiness and subsequent academic success. Vulnerable populations, including students with disabilities, tend to be bullied more often than students without exceptional needs. Those with ASD are three to four times more likely to be bullied, attacked, verbally or physically abused, targeted for hate crimes, and or threatened than typical peers (Blake, Lund, Zhou, Kwok and Benz, 2012). Students with disabilities, particularly those with ASD, are seemingly set-up to fail in the aforementioned scenarios without proper supports that proactively meet the individual's needs.

But, what if teachers could harness precursors to inappropriate behavior, de-escalating the behavior before it peaks? How could teachers be more effective in the classroom using fewer resources? Could positive interventions be implemented using an inanimate object, proactively intervening before behaviors peak?

Artificial Intelligence and Socially Assistive Robots (AI SAR) offer hope in helping to address the negative impact of a post-pandemic society, especially for vulnerable populations with challenges related to social emotional regulation. This is not to say or imply that individuals with ASD are contributing to the increase of aggressive and violent behavior, nor do we suggest or imply that statistics driving the increase of inappropriate behavior is reflective of students with varied disabilities. No single population is excluded from these data.

This project focuses on individuals with ASD because these individuals are more rejected by peers, typically the target of bullying, and are challenged by changes to routines. Moreover, given the increase of teachers or others reassigned to cover classes who may or may not have knowledge about individuals with ASD, the child's reactive meltdown may be misinterpreted as being aggressive and or violent. Individuals with ASD are the least successful in making and maintaining relationships and jobs, and currently, have a higher rate of failure at life success than other disabilities. Although individuals with ASD are capable of work and offer many talents and a profound intellect in various niches and tasks, a new study from the Office of National Statistics reports that 77 percent of adults in the United Kingdom with ASD want a job, but only 29 percent are able to attain employment (Putz, Sparkes, and Foubert, 2021). These findings are up from those reported four years earlier in a National Library of Medicine survey, wherein 254 participants were polled. Among those participants, 68 percent of adults with ASD had a job, whereas 39 percent were unemployed, and over half reported job imbalance and did not receive any assistance on the job, despite self-disclosing their needs (Ohl, Grice, Small, Nguyen, Paskor, and Zanjirian, 2017).

A close frontrunner with overlapping characteristics and similar life outcomes includes individuals identified with Attention Deficit Hyperactivity Disorder (ADHD). The prevalence of individuals with ADHD is one in three. These statistics are exacerbated by staggering outcomes related to the number of individuals with ADHD who will develop alcohol or drug addiction, Bipolar Disorder, and or dropout of high school (Fast, Wentz, Roswall, Maxwell, Bergman, and Dahlgren, 2023; Thrower, Bretherton, Pang, Zajac, and Cheung, 2020; Zauderer, 2023). We raise awareness to this data because ADHD and ASD are commonly misdiagnosed and or comorbid (Antshel and Russo, 2019).

Social communication approaches have used various methods such as modelling and reinforcement, adult and peer mediation strategies, peer tutoring, social games and stories, video modelling, direct instruction, visual cuing, circle of

friends, and social skills groups. There are successful educational interventions and therapeutic approaches used to treat different behaviors, including but not limited to the following: Applied behavior Analysis (ABA) and Pivotal Response Therapy (PRT; play-based interaction that capitalizes on what the child chooses to play with, while the facilitator teaches appropriate developmental behaviors using modelling, imitation, and communication, such as turn-taking and modelling how the toy should be played with.)

Another popular intervention is called DIR-Floortime (commonly referred to as Floortime). This intervention uses a flexible, individualized approach that builds on the individual's Developmental levels of functioning and focuses on a variety of Individual-differences that are specific to the child and their Relationships with others. Similar to PRT, Floortime refers to the time parents, therapists, teachers, etc. literally join students on the floor to play, interacting with the child at their level. In other words, what is the child doing and how can others within that environment help the child to evolve the inappropriate behavior to a more appropriate replacement behavior? The teacher, parent, or therapist builds on what the child can do, rather than identifying what they cannot do correctly from the outset) (Greenspan and Wieder, 1997).

DIR-Floortime with its standard use of other people and preferred 'toys' as part of the session allows for the introduction of SAR in place of some other object (or toy) during sessions. Current research activities using robots have established that robots programmed for a variety of behaviors can serve to motivate proactive interaction and mediate joint attention between the child and a peer or an adult (Billard, 2003; Feil-Seifer, and Mataric, 2009; Werry, Dautenhahn, and Harwin, 2001).

It is important, here, to note that no two individuals with ASD are alike. While students with ASD may exhibit similar characteristics, the degree to which individuals exhibit these characteristics is contingent upon many contributing factors. The added elements of unfamiliar interactions, unpredictable behavior, and the inconsistent responses of having to interpret and process how the child needs to respond can be overwhelming to some students with ASD. If these individuals lack self-regulating skills or coping mechanisms of how to adjust, their behavioral responses may lead to inevitable meltdowns. For a child with ASD, simply having an unfamiliar teacher assigned to the classroom, or a change in a daily routine or schedule (e.g., lunch time is 30 minutes later), could trigger an inappropriate response, derailing the child's ability for success the rest of the, along with everyone else who is in the same classroom. There is no single established standard treatment or intervention that works the same for every individual with ASD. To date, there is no known research that uses AI SAR in the way we propose in this project.

### Benefits of Using SAR with Children with Autism

Several technology-based approaches have been used to teach social skills to individuals with ASD. Research shows promise of using SAR in the treatment of individuals with ASD (for review of literature, see Syriopoulou-Delli and Gkiolnta, 2022). The use of SAR allows a child to physically interact with a three-dimensional object through touch, natural language communication, physical play, blowing bubbles and proximity, versus two dimensional interactions using a computer screen or life-size child image projected on a wall or flat surface (Michaud, Laplante, Larouche, Duquette, Caron, Letoumeau, and Masson, 2005; Trafton, Trickett, Stitzlein, Saner, Schunn, and Kirschenbaum, 2003). Unlike video instruction, SAR not only provides the opportunity to learn from a nonthreatening, three-dimensional inanimate object, it also presents the opportunity to learn through imitation and

interaction, encouraging autonomous social behavior (Mahmud, Kamel, Singh, and Kim, 2023; Robins, Dautenhahn, Boekhorst, and Billard, 2005). While the use of SAR has helped to decrease stereotypic behavior among individuals with ASD, when compared to human-human interactions, SAR can also be used to increase and or teach appropriate social behavior (Mahmud, et al., 2003; Robins, et al., 2005).

Using Artificial Intelligence (AI), SAR can be programmed to respond to changes in a child's immediate environment using the DIR Floorplan methodology. This flexibility would benefit users because spontaneous adaptations can be scripted responses, delivered through a predictable, consistent robot. Scripted speech that is programmed into the robot can help the robot interpret actions and responses that are unique to the individual's needs within a prescribed environment. Robots equipped with AI are mobile and versatile teaching tools that can be used as a proactive intervention to help support autonomous behavior among students with varying needs.

Moreover, SAR are motivating, interesting, and engaging. This validates the research worldwide documenting positive outcomes in using SAR for therapeutic and rehabilitative purposes. We have also shown promise in using SAR as evidenced by the observed behavior among students with ASD during preliminary trials in school and home environments (Nikolopoulos, Kuester, Sheehan, and Dhanya, 2010; Nikolopoulos, Kuester, Sheehan, Sneeha, Herring, and Becker, 2010; Nikolopoulos, Kuester, Sheehan, Ramteke, Karmarkar, Thota, Kearney, Boirum, Bojedla, and Lee, 2011; Tennyson, Kuester, and Castele, 2016; Tennyson, Kuester, and Nikolopoulos, 2014). SAR is believed to hold endless possibilities and significant promise for behavioral interventions among individuals with ASD.

Within the classroom, acting as a social agent through which appropriate behavior may be taught to individuals with moderate to high functioning ASD, SAR can help to minimize the human (teacher) inconsistencies associated with interactions during the teaching phase. The robot's facial expressions, speech, volume, tone, space, movements, etc., are scripted and written into the code of how the robot interacts with the child. This consistent, nonjudgmental protocol would minimize potential triggers of meltdowns. At the first sign of a behavioral change from the student, the robot would notify the teacher of the changes, simultaneously intervening and engaging the student by offering a more appropriate way to respond, thus, proactively derailing the possible meltdown before it happens.

#### Building an AI Robot for Use with Individuals with Autism

The objective of this ongoing project is to build an AI SAR that will sense when a student is on the verge of a meltdown or inappropriate reaction (predict), forewarn the teacher (raise awareness), interpret an appropriate response and then proactively intervene (engage with the student to adapt and prevent). De-escalating the behavior, offering alternative, more appropriate responses that align with socially acceptable constructs and rules will support successful inclusion.

A meltdown is defined as an inappropriate behavioral response (physical and or verbal) to situation(s) that are perceived by the individual to be overwhelming and or beyond their control (or skill set that allows them to appropriately respond). Inappropriate responses may include but are not limited to: physical (throwing things, slapping or hitting things, self or others, fidgeting and increased movement of hands, feet, arms, head, body, increased frequency, and or duration of these types of observations, etc.) and or verbal (screaming, swearing, increased verbalizations, making verbal noises, talking, increased volume, increased frequency, and or duration of these types of verbalizations, etc.).

The required elements of our AI SAR, named RASD (Robots for Autism Spectrum Disorder) include the following multidisciplinary collaborative team members and consultants from: The Department of Education, Counseling and Leadership, Department of Computer Science and Information Systems, Department of Mechanical Engineering, and the Department of Electrical Engineering. In addition to the authors, our team sought expertise from mechanical engineers and electrical engineers.

### Design and Programming Parameters

RASD must have the following visually aesthetic qualities and capabilities as shown in Figure 1.

Figure 1. RASD Prototype



#### Appearance

- Simple and animal-like (versus humanoid)
- Must be friendly-looking, nonthreatening, pleasing and soothing
- Edges must be rounded (not sharp)
- Actuators, moving parts must be free from potential fingers being caught or pinched
- Mediumly soft surface (not so soft [fur] that child gains insatiable need to hold/touch [silicone or hard/durable plastic])
- Inside workings must be hidden from user's view, yet accessible for maintenance
- Platform must have eyes and camouflaged sensors for data collection
- Mobile with all-terrain (robust) wheels (carpet, tile, sidewalk)
- Well-balanced and low to the ground to support terrain variations
- Motor (actuators) must have low noise (dBA)
- Minimal small parts that can get loose and fall off, or become a weapon
- Animal-like features (ears, eyes, nose, mouth, tail, legs, paws)
- Robust (to withstand student touch, kick, throw, etc.)
- Affordable ( $\leq$  \$200- $\leq$  \$2000) and simple to use interface for novice users

#### Capabilities

- Collect visual and auditory input from a specific student (hidden video recorder)
- Facial recognition (ability to reach out with a proactive greeting)
- Collect data of its surroundings (environment)

- Depth sensing (personal space / safe distance from people, objects)
- Differentiate between appropriate and inappropriate behavior and respond accordingly with appropriate output (speech via camouflage speaker)
- Speech with nonjudgmental, nonthreatening tone and volume
- Adjustable speech volume
- No delay of speech (to support spontaneous engagement with student)
- Bluetooth / WIFI connectivity (to support facilitation from a distance)
- Machine learning for adaptability and individualized responses to varied behavior
- Meet social skills curriculum (varied social interactions, such as playing a 1:1 game with student; listening/reading a short story; asking/responding to simple conversation starters [How was your day; Tell me about your day; What did you like best?])
- Ability to allow teacher to facilitate appropriate interactions, contingent upon curricular needs (see previous bullet item)

The hardware components selected for building RASD focus on achieving a balance between cost-effectiveness and robustness. Key elements include 3D printed parts made from durable, lightweight plastics such as PLA or ABS, supports custom components and rapid prototyping. The chassis and frame are constructed from high-impact, mediumly soft materials like silicone or durable plastic, designed with rounded edges to prevent injuries and enclosed moving parts to avoid pinching hazards. Low-noise DC motors with encoders provide smooth and quiet movement, ensuring minimal disruption in the classroom. All-terrain wheels enable the robot to navigate various surfaces, including carpet, tile, and sidewalk. Additionally, high-sensitivity microphones and the IMX219-160 Camera Module with an 8-megapixel sensor are integrated for comprehensive data collection, while the NVIDIA Jetson Nano serves as the central processing unit, offering robust processing capabilities in a compact form. This configuration ensures that RASD is economical, durable, and capable of effectively supporting students with ASD.

For RASD's visual input, we have selected the IMX219-160 Camera Module, renowned for its advanced capabilities. This camera features an 8-megapixel sensor with a resolution of 3280 × 2464, delivering high-quality, detailed images. Its wide 160-degree field of view is ideal for capturing a broad visual range within classroom settings, ensuring comprehensive monitoring with minimal blind spots. Seamlessly compatible with the NVIDIA Jetson Nano, this camera integrates effortlessly with our computing platform, leveraging the Jetson Nano's robust processing power. This combination enables sophisticated functionalities such as motion detection and facial recognition, significantly enhancing RASD's interaction with students. The advanced image processing capabilities facilitated by the ROS (Robot Operating System) packages ensure real-time analysis and response, making RASD an effective tool for identifying and mitigating potential behavioral triggers in students with ASD.

The NVIDIA Jetson Nano serves as the central computing unit for RASD, chosen for its compact size and robust processing capabilities. This single-board computer fits easily within the robot's structure and provides sufficient power to manage complex algorithms and facilitate communication across various components of the system. Additionally, it supports the integration of Internet of

Things (IoT) applications, enhancing the robot's connectivity and functionality. The Jetson Nano's compatibility with a wide range of electronic components and its ability to run Linux make it an ideal choice for physical computing tasks within RASD's operational framework.

To ensure real-time communication without the delays associated with text-to-speech applications, we will implement a Voice API for RASD, enabling it to 'speak' directly to students. This API will support extended interconnectivity through IP Voice and the Public Switched Telephone Network (PSTN), facilitating seamless communication across various platforms and networks. We propose utilizing a sophisticated Voice API such as Twilio or Google Cloud's Text-to-Speech API, known for their low-latency performance and high-quality speech synthesis. These APIs offer natural-sounding voice outputs and can be fine-tuned for various accents and languages, enhancing the robot's ability to communicate effectively with a diverse student population.

Additionally, we will integrate OpenAI Whisper for Automatic Speech Recognition (ASR). Whisper excels in real-time speech-to-text conversion and environmental noise processing, allowing RASD to accurately interpret and respond to verbal cues from students. This system supports multiple languages and can handle various accents, ensuring clear and effective communication. By combining these technologies, RASD will be able to engage in dynamic, natural conversations with students, providing immediate feedback and interventions. This approach not only improves the robot's responsiveness but also creates a more interactive and supportive environment for students with ASD.

To support the machine learning components of RASD, we will utilize Android Studio in conjunction with Python libraries. This combination is ideal for data collection and processing, allowing us to interpret student actions and determine the best responses in real-time. Android Studio's compatibility with Python simplifies the integration of machine learning algorithms, facilitating the development of intelligent and adaptive behaviors in RASD. Additionally, as shown in Figure 4, Android Studio enables the creation of a user-friendly Graphical User Interface (GUI) tailored for novice end-users, ensuring that teachers, paraprofessionals, parents, service providers, etc. can easily interact with and control the robot from afar.

We will employ TurtleBot, a popular open-source robot platform, to design and test various aspects of RASD. TurtleBot allows us to experiment with different shapes, designs, and configurations of wiring and moving parts in a simulated environment. This platform is invaluable for optimizing the robot's physical design, ensuring it meets both functional and aesthetic requirements. By using TurtleBot, we can gauge students' preferences for colors, shapes, and features, tailoring RASD's appearance to be more engaging and appealing.

### Phases I, II, and III of Development

Phase I required cross-discipline learning and brainstorming among team members. Theoretically speaking, humans thinking somewhat like robots with intake and interpretation of collected data. Machine learning is when a robot recognizes patterns of prior knowledge, based on environmental interactions, then performs the task based on what it learned. The more knowledge it gains, the more efficient it becomes.

Humans also learn, based on prior knowledge from their own life experiences. Each time a multidisciplinary team meets, each member learns a little more information from their respective teammates' discipline. The team meetings become the environment within which each member gains new knowledge. In every subsequent meeting, members become more efficient machines, because they have



learned more knowledge that better supports enriched conversations about innovative and connective solutions. Noting that we all do not have to be experts in each other's fields, the multi- and interdisciplinary teams offer a variety of perspectives based on team members' own expertise and life experiences. These types of teams add rich, rewarding conversations about how to best meet the needs of challenges within society (KiNancarrow, Booth, Ariss, et al., 2013).

Our project team members met multiple times to discuss challenges and characteristics of individuals with ASD. Members discussed how the classroom landscape had changed post-COVID, learning from each other, connecting prior knowledge, and discussing personal experiences along the way. Challenges for a student with ASD were discussed. These included, for example: The difficulty the student may have in a classroom with a different teacher, familiar and unfamiliar routines from day to day and throughout the day, and unexpected changes occurring multiple times within a short timeframe. Because team members would be conducting research that involved human subjects, members were required to complete social and behavioral human subjects training during this phase for the use of human subjects in research.

Team members then brainstormed ways to meet the needs of a student with ASD in classroom environments using an AI SAR. Outcomes yielded a list of requirements and parameters for RASD, along with options to explore for sources of funding for equipment and development.

Phase II requires application to sources of funding and the purchase of equipment. Design and development of a robot that meets specifications will be completed, along with behavior trees for learning models and programming thereof. Prototypes will be designed and built. In addition, team members will observe and engage prospective students with ASD to determine preference of appearance of RASD and various other robots. That is, do looks matter?

Phase III will require algorithm development, coding and documentation. In addition, field tests and debugging must occur to refine robotic capabilities prior to introducing RASD to target populations of pilot studies. Finally, the team will perform maintenance of RASD and any unforeseen challenges that surface along the way. Pilot studies will be conducted using a mixed design case study across environments, gauging student behavioral reactions to RASD through observation in varied environments (qualitative classroom and hallway), as well as how often the student initiates interaction, invades personal space of RASD, and responds to RASD in life-like, human-to-human spontaneous interactions (quantitative).

### Conclusion and Future Research

School districts are faced with an insurmountable teacher shortage, including Pre-kindergarten through high school, as well as colleges and universities that offer education licensure and certification. In the aftermath of COVID, daily struggles have consistently gotten worse since returning to the classroom for the entire school community. Now, more than ever, teachers and students struggle to navigate the changed landscape of what used to be called a typical classroom. Students attendance is down, teacher retention and recruitment continue to fall short, and the gap between student readiness to advance through their education program versus their actual success of both social and academic skills, continues to widen. School districts are desperate to hire qualified teachers and where they once had more teachers than openings, the landscape has flipped. They now have so many openings, school districts are hiring staff or anyone else willing to accept the challenge of being in a classroom.

The result of COVID not only negatively affected teacher recruitment and retention, it negatively affected the social and emotional development of students. Instead of teaching academics, teachers spend more time reacting to aggressive and violent behavior, toward them as well as toward other students. An easy target for this type of behavior appears to be students with Autism Spectrum Disorder, one of our most vulnerable population of learners. With these outcomes, teachers brave enough to stick it out (and those who follow) need help in offsetting the continuum of inappropriate student behavior. More research is needed to determine more definitive cause and effect of student's continued inappropriate aggressive and violent behavior in the classroom.

A possible solution is to offer alternative intervention using Socially Assistive Robots programmed with Artificial Intelligence. The purpose of this multidisciplinary project is to develop an AI SAR named RASD (Robots for Autism Spectrum Disorder). The use of RASD has potential to proactively intervene when it senses changes in student behavior, offering more appropriate alternatives. While some students may react negatively to a teacher's redirect, a post-COVID classroom may welcome alternatives from an inanimate object that is consistent, friendly, animal-like, sensory-stimulating, responsive, nonjudgmental, and three-dimensional. More research is needed to determine students' as well as teachers' preference, interest, and motivation of robots in the classroom, particularly AI SAR.

Research abounds in the field of SAR, yet there is no known research that uses an AI SAR in the classroom to support teachers, as well as student success. There is no known research using this innovative approach to learning appropriate social behavior. Machine learning is needed, however, in order for RASD to be able to recognize a variety of behaviors as inappropriate, and then be able to offer more appropriate options to the student. Field tests of prototypes are also needed to gauge physical likability of RASD among students in varied classrooms as something motivating and appealing.

While research continues to yield the effects of COVID, good and bad, harnessing technology to help improve the social and emotional readiness of children, and the efforts of teachers is paramount. Innovative ways to support teachers and students via inter- and multidisciplinary teams is needed worldwide to help reduce the gap between student's readiness and current academic and social success.

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## Caring in Teacher Education

by

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### Abstract

*The purpose of this paper is to provide an overview of trends in teacher education, specifically pertaining to ways in which teacher educators model caring in the classroom. Nel Noddings' ethics of care informs work in this area. It is argued that when teacher educators purposefully and genuinely show care for preservice teachers (PSTs), those preservice teachers will, in turn, demonstrate similar levels of care for their future students. Forty years ago, teaching morality was of primary concern since teachers are held to a higher behavioral standard. Teacher education programs have evolved to a focus on creating a sense of community and care around cohorts of preservice teachers. However, most research around modeling care for PSTs occurs in early childhood and elementary programs. More research and intentionality need to happen in middle level and secondary teacher education programs given the social and emotional needs of adolescents as they mature.*

"I hate school." "The teachers don't care about us." Students have been saying these things since the inception of school. In fact, Noddings (2005) wrote, "in many of our schools today, we find teachers who are trying to care and students who want to be cared for, and yet many of those students claim, 'Nobody cares!'" (p. xv). Teachers do care, but sometimes an adult's idea of caring is different from that of a child or adolescent. In addition, there are competing agendas in schools that make it difficult for teachers to show they care, or for students to perceive caring. With the current culture of standardized testing and teacher accountability in schools, the pressure sometimes makes it difficult for teachers to exhibit genuine caring (Cochran-Smith, 2003; Rabin, 2013). Students, in turn, see the pressure to perform on tests as a sign that teachers do not really care about students as individuals (Noddings, 2005). Current preservice teachers' school experiences have revolved around this testing culture, and it affects how they view themselves as teachers. It is incumbent on teacher education programs to explicitly teach what it means to teach with care. The purpose of this paper is to provide an overview of trends in teacher education regarding pedagogies of care. In doing so, to suggest ways programs can strengthen the model of care, support preservice teachers as they learn what it means to genuinely care about students, and to highlight effective teacher education programs focused on caring.

### Methodology

The search for articles pertaining to the literature on the role of caring in teacher education began with various library databases. Using the Discovery Service search fields I initially searched between 1907 and 2024 using the term "caring" in the first field and "teacher education" in the second. This search produced more than five thousand possibilities. To limit this number and to make sure that the articles included were of quality, I limited the search to those from scholarly journals, academic journals, and in English. I placed no restrictions on location. This further reduced the search down to just under three thousand resources. Overwhelmed by the large number of articles, I deleted both searches and typed "caring in teacher education" in the first field. This search, limited to scholarly academic journals in

English, yielded a more palatable 512 articles over the span of 1988-2024. In total I read 82 articles and 12 book chapters.

Prior to the 1980's there was little research on the role of caring in teacher education programs. There were certainly theorists discussing care and human development, but early ideas about caring in schools focused on empathy. After Noddings' extensive work on the ethic of care in the early 1980's there is a great deal of literature discussing her ideas and how they should look in teacher education programs. Most articles contained in this literature review referenced the work of Nel Noddings', specifically her work on the ethic of care and how it plays out in teacher education. Citing the historical trajectory of the public school's role in providing moral education, Noddings (1986, 1988, 2003) suggests an ethic of caring as an alternative to traditional moral training. Rather than teaching morals as just another school subject, teachers should engage in modeling caring behavior, involving students in dialogue about subject matter and personal interests, practicing caring relationships through service to others, and confirming students' individuality and positive achievements.

There is an implicit understanding that care should be incorporated widely into teacher education programs based on standards set forth by the National Council for Teacher Accreditation of Teacher Education (NCATE). Directives from NCATE have indicated that teachers' dispositions are as important as their knowledge and skills, particularly in terms of treating students fairly and in understanding that all children can learn (Morris and Morris, 2002; Rabin and Smith, 2013). Furthermore, the idea that a good teacher is a caring teacher appears to be widely accepted (Cochran-Smith, 2003; Demetrulias, 1994; Nguyen, 2016; Perry and Quaglia, 1997; Rogers and Webb, 1991). While much of the literature on the role of caring in teacher education is also largely based on Nel Noddings' ethic of care, each author reiterates, expands or critiques this work to create a comprehensive understanding of how caring should be enacted and promoted in teacher education programs.

Forty years ago, an ideal teacher education program was based on a strong moral foundation. According to Liston and Zeichner (1987) moral deliberation was a necessary component of teacher education. Moral deliberation extends beyond reflective practice and the notion of teaching as a moral duty. Today, preservice teachers still need to learn to examine the moral dilemmas that often accompany certain educational practices, such as ability grouping and grading practices. Furthermore, teacher education programs need to practice what they preach. If preservice teachers are expected to conduct their classrooms equitably and with caring, the programs that prepare them should model these very concepts (Arnstine, 1990).

Teacher education programs have several moral obligations (Goodlad, 1992). These obligations include an understanding of individual and collective rights in a democratic society, how to access knowledge, and how knowledge is shared. In addition, teacher educators would do well to convey to preservice teachers that each judgment made about a student and each decision made about a lesson reveal the moral dimensions of teaching (Elbaz, 1992).

Nash (1991) cautioned that too often preservice and novice teachers make moral decisions based on personal beliefs or intuition. To avert this, as well as potential lawsuits, teacher education programs need to incorporate courses on ethical decision-making. Ethics courses should include three dimensions of moral decision-making: "rules/principles, character/structure, and belief/ideals" (p. 163). Preservice teachers should learn to approach each dilemma with an understanding

of how to apply the rules, the nature of the situation, and how their personal experiences influence their beliefs.

Coursework in teacher education programs should revolve around caring and how it extends beyond the classroom. Service learning is an example of modeling and practicing Noddings' ethic of care in teacher education. Swick (1999) explained how incorporating service into teacher education programs gives preservice teachers opportunities to learn how to be more caring, as well as how to be more reflective and responsive learners. Service opportunities could include: "tutoring, mentoring, creative uses of technology, inquiry strategies, teacher-coaching, and cooperative learning" (p. 31). Similarly, Goldstein (2002) extended Noddings' work to include a "framework that will pay explicit attention to the development of caring community and will provide space for explicit consideration of care-centered habits of mind regarding curriculum and teaching practices" (p. 40). This framework, she argued, is important so that preservice teachers can develop critical friendships within a cohort that can offer trust, support, and encouragement to one another. Practicing how to build and sustain a supportive community will prepare preservice teachers to work more cooperatively with colleagues in the future. Further, Goldstein advanced a teacher education program based on commitment to an ethic of caring, a sense of community-oriented intimacy based on shared experiences, and a passion for teaching and learning.

Teacher education programs should encourage preservice teachers to write and share the stories of their journey to becoming teachers to explore their beliefs and understandings about what it means to be a caring teacher as part of a larger community (Swick and Brown, 1999). In writing these missives, preservice teachers can address three key concerns. First, how to create a nurturing environment so that all stakeholders become caring individuals. Second, how to encourage all teachers, students, and parents to buy in to an ethic of caring. And third, how caring can be extended to other aspects of the community (Swick and Brown, 1999).

Finally, to teach teachers to care in any genuine sense requires redefining what care means (Rabin and Smith, 2013). Rather than referring to care as an affective quality one possesses, teaching about care ethics fuses the affective and cognitive domains. Preservice teachers need to practice strategies that will enable them to reflect on situations, misunderstandings, and relationships. Through journal exercises, dialogue, and role-playing, teacher educators can help preservice teachers "distinguish between care's common usage and what it could mean to assume a care ethic in the particular situations they encounter in the classroom" (p. 172).

The role of caring in teacher education has been, and still is, carried out in individual classrooms and university programs, many of which are based on Noddings' ethic of care. From 1988 through 2007, several studies have outlined teacher education courses or programs whose mission has involved a devotion to modeling care. For example, while working at Roosevelt University in Chicago, Henderson (1988) taught a class for preservice teachers in which he planned, enacted, and evaluated all facets of the course under the guise of Noddings' ethic of care. While encouraging students to take control of their own learning, Henderson continually evaluated his own teaching through frequent feedback from students. The goal was to make sure that student concerns were being met while modeling a caring, student-centered classroom. Likewise, Tinkler (2006) discovered a high level of concern for students in a study of a preservice teacher seminar. In the seminar, the teacher educator took the time to get to know students personally while modeling self-analysis of her instruction. An example of an early childhood teacher education program deeply dependent on Noddings' work was found at the University of South

Carolina, where students engaged in service learning, child development study and year-long internships. Faculty in the program modeled caring through counseling, reflective journaling, and inquiry-based dialogue (Freeman et al., 1999).

Bruce and Stellern (2005) developed what they call the Caring Community Model of teacher education. The program, based on principles of acceptance, support, and collaboration, modeled a caring learning community that preservice teachers could emulate in their own classrooms. Through activities created to support reflective decision-making, conflict resolution, and goal setting, preservice teachers could “discover new and better ways of being with each other and to develop caring relationships in order to change society in meaningful ways” (p. 50). Likewise, caring is a central component of teacher education at Lehman College in New York, where the focus is on creating a community of learners, promoting social justice, and capitalizing on students’ abilities and talents (McNamee et al., 2007). The program connects theoretical learning with aesthetic expression and extensive journaling.

Journaling about personal beliefs and preconceived ideas about what it means to be a caring teacher is an effective way for preservice teachers to work toward building a community of caring between their classrooms and their students’ parents (Goldstein, 2003). Such journaling can be done through written or electronic means, provided the process supports dialogue between the preservice teacher and the teacher educator (Goldstein and Freedman, 2003). Continuing the dialogue through journaling is an important exercise that supports the preservice teachers during student teaching. This continued support allows the teacher educator to model caring for the preservice teachers who can in turn enact caring with their students (Goldstein and Lake, 2003). The continual process of modeling and dialogue through the journaling process supports Noddings’ concept of fidelity in teacher education, which holds that the quality of a relationship involves focusing on the individual (Lake, 2003).

Preservice teachers need to understand that when they teach, they inadvertently teach about themselves. To teach with an ethic of care, preservice teachers need to have self-knowledge (Rabin, 2013). In a case study of a two elementary education foundations courses, Rabin found “authenticity as core to embracing the importance of self-knowledge and the capacity to share one’s self in one’s role as a teacher who cares” (p. 245). A central concern of preservice teachers in learning to foster a caring community among students is classroom management. Rabin and Smith (2016) developed an assignment for preservice elementary teachers that involved reflecting on classroom management practices. By examining their own understandings of control, coupled with their cooperating teachers’ systems of rewards and punishments, these preservice teachers created blueprints for classroom management plans that incorporated care theory and its practical applications. This blueprint taught them “that classroom management should be indistinguishable from all their actions in a classroom and the aim to foster caring community ought to be at the heart of all their lessons’ purposes” (p. 612).

An effective teacher education program needs to be supported by real life examples of caring schools for preservice teachers to buy into a foundation of caring. A case study by Morris and Morris (2002) of a predominantly African American secondary school in Alabama serves as the impetus for questioning the role of caring in teacher education. The school is a model of caring because it embodies dedicated, caring teachers, enjoys support from parents and the community, and offers a curriculum that is varied and relevant to students’ interests. The teacher educators studying this school suggest this school as a real-life example of culturally responsive teaching, social justice, and caring teacher-student relationships. The



case study of this African American school leads to many guiding questions for teacher educators. Namely, whether the ability to care about others should be a requirement for admission to education programs and how university faculty can model the caring relationships exemplified by this Alabama high school in their courses.

### Trends in Caring in Teacher Education

As stated previously, most of the literature on caring in teacher education is based on the work of Nel Noddings, particularly the framework of modeling, practice, dialogue, and confirmation. While all four components are frequently mentioned, modeling and dialogue seem to be discussed more often. Several researchers (e.g. Barrow, 2015; Bruce and Stellern, 2005; Demetruilas, 1994; Goldstein, 2002; Kemp and Reupert, 2012; O'Hara-Gregan, 2022; Perry and Quaglia, 1997, Velazquez et al., 2013) point to the fact that caring needs to be modeled by teacher educators to help preservice teachers transfer caring practices into their own classrooms. Dialogue, whether in person or in writing, has been widely used as a method by teacher educators to get to know students, understand their beliefs, and offer support (Goldstein and Freedman, 2003; Kim and Schallert, 2011; Lake, 2003; Rabin, 2013; Rogers and Webb, 1991).

Examining preservice teachers' beliefs is a prevalent theme in the literature. Understanding preconceived notions about caring is a necessary first step in determining how to proceed with preservice teachers (Elbaz, 1992; Eisenbach, 2016; Gomez, Allen, and Clinton, 2004; Kemp and Reupert, 2012; Lee and Ravizza, 2008; McBee, 2007; Nash, 1991). Often, future teachers enter education programs thinking that care in the classroom equates to kindness and being helpful (Nowak-Fabrykowski, 2012). Teacher educators need to help these novices to confront their beliefs about care and show them what it means to teach with an ethic of care (Ellerbrock et al., 2015; Lake, 2003; McBee, 2007; McLaughlin, 1991; Rabin, 2013; Rabin, 2014; Rogers and Webb, 1991; Wrench and Garrett, 2015). An ethic of care in teaching goes beyond the affective to combine with the intellectual aspects of learning and doing.

An ethic of caring comes from what Noddings (1988) calls a relational ethic based on natural caring. This concept applied to teacher education requires preservice teachers to learn to "work together not only on curriculum but also on school conduct – on the attitudes and practices that characterize social interactions in the school community" (Noddings, 2015, p. 171). In their study of secondary preservice teachers, Laletas and Reupert (2016) found that many of the participants felt a lack of appropriate training to enact care during their student teaching. Therefore, it is necessary that teacher educators explicitly teach caring (Elbaz, 1992; Goldstein and Lake, 2003; Gomez et al., 2004; McBee, 2007; Owens and Ennis, 2005; Rabin and Smith, 2016; Rogers and Webb, 1991; Tinkler, 2006).

The concepts of self-care and mindfulness have become central concepts in teacher education literature, especially in the wake of the COVID-19 global pandemic. Helping preservice teachers set boundaries and include self-care practices will help them have the patience and positive state of mind necessary for interacting with students had difficulty reconciling the difference between personal care and professional care (O'Hara-Gregan, 2022; Whitehead et al., 2023). Historically, however, preservice teachers have had (e.g. Demetruilas, 1994; Kemp and Reupert, 2012; Lee and Ravizza, 2008; O'Hara-Gregan, 2022; Perry and Quaglia, 1997; Weinstein, 1998). Personal care refers to interpersonal relationships while professional caring covers careful lesson planning and instruction. For example, participants in Kemp and Reupert's (2012) study were concerned that there existed a continuum in which one could either care too much or not at all,

making it difficult to find a happy medium. Kemp and Reupert therefore stressed that it is the teacher educator's job to teach preservice teachers about "the range of caring that might be asked of them by different students and at different year levels" (p. 124). The literature also shows preservice teachers' struggles over the differences between care and control in the classroom (McLaughlin, 1991; Katz, 2007; Rabin, 2014; Rabin and Smith, 2016; Rosiek, 1994; Ylitapio-Mantyla, 2013). McLaughlin (1991) suggested, "teacher educators should create a supportive environment in which student teachers can understand and enact caring and controlling in a manner that establishes legitimate authority" (p. 192). It is also worth noting that preservice teachers have concerns about how appropriate boundaries are maintained in a caring relationship with students (Goldstein and Lake 2003; Kemp and Reupert, 2012; Laletas and Reupert, 2016), especially with whether to physically touch students.

Finally, there is a clear link in the literature between caring teaching and good teaching. Several (e.g. Nguyen, 2016; Perry and Quaglia; Rogers and Webb, 1991; Wrench and Garrett, 2015) have stated that good teachers care about students' well-being and academic success. Many researchers (e.g. Barrow, 2015; Morris and Morris, 2002; Nguyen, 2016; Owens and Ennis, 2005; Tinkler, 2006) have claimed that when students feel cared for, academic achievement improves.

#### Addressing the Gap

The literature on the role of caring appears to be quite extensive. There are discussions of why teachers should care about students, why teacher educators should care about preservice teachers, and a host of practical programs in use that model caring to preservice teachers. Most of the literature, especially the empirically based literature, is heavily focused on elementary education. Perry and Quaglia (1997) showed that elementary school teachers seem to focus more on personal caring while secondary teachers focus on professional caring. Weinstein (1998) suggested that preservice teachers of all levels need a "broader, more inclusive" (p. 162) understanding about caring. Whitehead et al. (2023) studied adolescent students' perceptions of teacher demonstrated care in classroom interactions. Results of this study highlighted student appreciation for teachers who were kind, clear, and helpful. The fact that this study was done with students of in-service teachers indicates that more needs to be done in teacher education programs to support preservice and novice teachers' ability to demonstrate similar levels of caring.

A cursory survey of the literature shows about 20 articles focused on caring in preservice early childhood and elementary education, 6 in secondary and only 2 in middle childhood, with several others being unspecified. This lack of research on caring in secondary and middle childhood education is alarming, particularly in middle childhood given the social and emotional challenges these students often face. It may be the case that understanding personal caring needs to play a greater role in teaching adolescents. At the very least, there needs to be more research on preparing preservice teachers to work with this population for two reasons. One, to help preservice teachers navigate this difficult age group. And two, to highlight the needs of this age group, if nothing else.

Because the focus of high school is to prepare students for being college and career ready, adolescents need to know that there are adults besides their parents who care about them. Bronfenbrenner's Ecological Systems theory contends that children need nurturing adult interactions in order to develop and grow; this must not be forgotten for adolescents. In fact, Evans et al. (2010) aptly applied Bronfenbrenner's theory to college student development. Citing the interaction

between college students and the campus environment, the students' individual personalities, as well as the time and place of college attendance, Evans et al. stated that Bronfenbrenner's theory explains "how peer cultures, famously resistant to intervention, might be influenced to improve the campus living and learning environment" (p. 167). The same certainly holds true for middle schools and high schools. More case study or narrative research could be done to provide models for middle level and secondary preservice teachers in enacting personal care for adolescents.

While there are some articles addressing culturally relevant pedagogy (e.g. Gomez et al., 2004; Morris and Morris, 2002), cultural differences (Garcia, 2000; Whitfield and Klug, 2004), English to Speakers of Other Languages (Nowak-Fabrykowski, 2012), and white privilege (Matias and Zembylas, 2014; Pennington et al., 2012) more work needs to be done in this area. With current statistics showing a steady increase in Multilingual Learners (National Center for Education Statistics, 2024), as well as growing urban school districts, more research needs to be done to ensure that preservice teachers understand how to care for these students. The demographic trend of the average teacher being a white female is not showing any signs of changing (Ingersoll et al., 2021; Matias and Zembylas, 2014; Pennington et al., 2012), therefore preservice teachers need to understand how to challenge their own biases and recognize students' needs based on their individual identity. Too often, demonstrations of caring are based on a patriarchal, white dominated, western notion of teaching imbued with an accountability mentality.

### Conclusion

Caring plays a central role in teacher education programs. Teacher educators have a duty to engage in reflective dialogue with preservice teachers, to model good teaching, to give preservice teachers multiple opportunities to practice what they have learned, and to offer confirmation of preservice teachers' abilities and professional identities. Future research on the role of caring in teacher education should focus more on how middle childhood and secondary teachers can provide for the personal needs of students, in addition to their academic needs. Preservice teachers need to understand that caring is more than being kind, it includes setting high expectations and supporting students' academic abilities and achievements (Ellerbrock et al., 2015).

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Bridging Knowledge of Trauma Informed Practices and  
Social Emotional Learning in Teacher Preparation Programs  
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Abstract

*Teachers need to be prepared to cultivate both their own and their students' social and emotional learning skills. If the recent turbulent times have shown educators anything, there is a need in teacher licensure programs to educate teacher candidates how to recognize trauma and respond with learner center methodologies to increase chances of success in their classrooms. The discussion begins by identifying the need for trauma informed approaches based on the prevalence of students affected by trauma. Next, pre-service teachers' knowledge of trauma-informed practices are considered. Finally, the paper presents a model for teacher preparation programs related to implement trauma-informed approaches with adult learners.*

Teacher candidates seeking licensure will be working in classrooms with children and adolescents who have experienced trauma. Potentially traumatic experiences include abuse and neglect; family, school, and community-related violence; war and displacement; natural disasters and pandemics; stressors associated with poverty and economic distress; and racism and discrimination (Osher, et al., 2021). Some types of traumas may be directed at children by the very people whom they depend for nurture and protection. Subsequently, trauma can have severe and detrimental effects on children's social, emotional, and cognitive development as well as their capacity to learn (Hobbs et al., 2019). If left unresolved, these consequences can extend beyond childhood into adolescence and throughout adulthood (Isobel et al., 2019). Research has shown that there are significant long-term and sometimes lifetime costs that result from trauma, which involve societal expenses associated with health, welfare, unemployment, and crime (Moore et al., 2015; Jaffee et al., 2018; Mo et al., 2020; Conti et al., 2021).

Trauma is everywhere. Even the most experienced teachers are not immune from the effects of trauma and have been forced to weather the challenges of teaching in diverse situations for decades. Recent statistics suggest that 31 out of each 1,000 children from birth to age 17 have been exposed to child maltreatment (L'Estrange & Howard, 2022). Furthermore, many more children have been affected by traumatic events that can exacerbate how family's function and lead to an increased risk of adverse experiences and outcomes (Boxall et al., 2020; Newby et al., 2020; Teo and Griffiths, 2020; Tan et al., 2020). Children who have experienced trauma often exhibit heightened stress responses, which, in turn, impacts behavior, learning, and relationships (Siegel, 2015; Berger & Martin, 2021). According to the Substance Abuse and Mental Health Services Administration (SAMHSA; 2014), children struggling with trauma often wrestle with anger, anxiety, and disorientation. They can appear moody, emotionally detached, or unable to control their emotions and reactions (Bailey, 2022). In fact, these behaviors can be misinterpreted by classroom teachers as deliberate and defiant, which can lead to further detrimental outcomes, including harsh punishments, suspension, and exclusion (Howard, 2019).

Social and emotional challenges brought on by trauma cut across age, race, gender, and socioeconomic status. Moreover, certain triggers are nearly universal because almost all children experience some degree of stress from

academic, social, or out-of-school pressures. Prior to the global pandemic, data from the National Survey of Children’s Health confirmed that one in five children across the United States had experienced two or more traumas, suggesting that trauma has been “hiding in plain sight” for decades (National Education Association, 2019). In some cases, trauma (or its consequence) can be prevented, buffered, or healed. In other cases, its consequences can be overcome and transcended. Yet, the situation is more complex, particularly, since there is a new generation of teachers who will have experienced one or more of these traumas themselves and be responsible for guiding their still-younger students.

Given that students spend a considerable amount of time at school, teachers are critical stakeholders in recognizing and responding to the needs of students who experience trauma. Unfortunately, educators unaware of how trauma manifests itself may perceive a student as exhibiting an “unreasonable behavior” and proceed with a disciplinary strategy (Public Counsel, 2015; West et al., 2014). This assumption can lead to what Jennings and Greenburg (2009) refer to as a “burnout cascade”, which is a tumble of repeated ineffective teacher responses to student behavior problems that result in increased student anger, teacher frustration, and emotional exhaustion (p.492). The outcome is often more intense and frequent punishment for students, which can lead to vicarious traumatization or re-traumatization (Jennings & Greenburg).

Therefore, it has never been more pressing in educational settings to promote a whole-child approach that fosters safe, equitable, engaging, and productive learning environments in which every student has opportunities to thrive socially, emotionally, and academically (Osher, et al.). Supporting the whole child requires school staff to be aware of the types, prevalence, and effects of adversity and trauma within their school community and the implications for promoting resilience (Osher et al.). Teachers’ capacities to *recognize* and *respond* to the trauma experienced by their students are dependent on many factors, including the preparation that they receive during their initial teacher education programs (Rodger et al., 2020). While it is beyond the scope of this article to provide a review of coursework across all teacher preparation programs, trauma-informed training for pre-service teachers is an essential part of teacher preparation that is needed to address the educational and life inequities stemming from childhood trauma.

#### Review of Teacher Preparedness to Respond to Trauma

Research continues to highlight a lack of teacher preparedness to *respond* adequately and inclusively to trauma-affected students (L’Estrange & Howard). This lack of preparedness is evident in practicing teachers and even more so in new graduates and pre-service teachers (Brown et al., 2020; McClain, 2021). In addition, graduate students report that they feel under-prepared to teach in a manner that services the whole range of diversity present in contemporary classrooms. This includes those who are perhaps misunderstood due to their behavior that is affected by the impacts of trauma (McClain).

While a small body of recent research has shown promise in increasing pre-service teacher knowledge and confidence in teaching children and young people affected by complex trauma, there is scant longitudinal data that informs us of how pre-service teachers may be implementing the knowledge they have learned in their practice after they have graduated (Bailey). For example, one study interviewed 15 early childhood pre-service teacher candidates in the United States (McClain). While all participants believed that there was a high prevalence of complex trauma and they would encounter trauma-affected students in their future classrooms, 60 percent reported that they were only “somewhat prepared” to support these students. In addition, the participants reported that their training lacked dedicated coursework on



explicit instruction in the understanding of trauma and its influence on learning and development as well as effective trauma-informed response strategies (McClain). Similarly, Davies and Berger (2019) reported findings from their interviews with Australian primary and secondary teachers who were already teaching in the field. All eleven teachers indicated that they felt underprepared to respond to students affected by domestic violence due to lack of pre-service training and experience. In fact, all participants commented on the lack of pre-service training within their university programs in the areas of trauma awareness and strategies to support students who had lived with domestic violence (Davies & Berger).

Studies have also explored the relationship between pre-service teacher education and teacher preparedness for supporting students who live in poverty, a context that can be associated with child maltreatment (Drake et al., 2022). Findings from these studies indicated that while teachers anticipated their work would involve students affected by poverty, they felt underprepared for how to best recognize and support these students (Robson et al., 2021). Similarly, a team of researchers conducted interviews with 17 principals to understand the relationship between teacher preparation of pre-service teachers and readiness to teach students in low socioeconomic areas (Longaretti & Toe, 2017). The results suggested that there was a need for pre-service teachers to have more knowledge about trauma and intergenerational poverty and its impact on learning and behavior of students in classroom settings (Longaretti & Toe). All in all, these studies highlight the importance of providing pre-service teacher with the knowledge, skills, and strategies to respond to trauma affected students.

In response to concerns with teacher preparedness, several studies have examined teaching and learning activities related to trauma-informed education in schools. For example, Rodger and his colleagues identified a mandatory university course in one teacher preparation program that included teaching of trauma-informed content within the context of mental health training. Pre-service teachers participated in a 12-week course that included six hours of training on trauma and a violence informed care component. The findings suggested pre-service teacher's attitude toward trauma-informed care and self-efficacy for using inclusive educational practices increased significantly after participation in the course (Rodger et al.). Similarly, another study found that 180 teacher candidates' knowledge and skills increased after participating in a three-hour training on trauma (Brown et al.). Likewise, another team of researchers reported that a 90-minute training increased 41 teacher candidates' knowledge, awareness, and self-efficacy for working with students affected by trauma (Foreman & Bates, 2021). Yet, each of the studies immediately collected follow-up data after the candidates were introduced to content related to trauma and given opportunities to learn about it. It is likely that knowledge retention could be at its greatest immediately after it is learned and does not explain how pre-service teachers may implement strategies after they have graduated and throughout their careers.

All in all, trauma-informed education varies in detail, depth, and delivery across teacher preparation programs. Yet, trauma-informed approaches are part of a broader debate about what educational practices and policies are necessary to support student success (Blodgett & Dorado, 2016). In schools, trauma-informed practices seem to exist in a crowded field of initiatives because school improvement efforts respond to overlapping needs drawing from similar developmental concepts. Either directly, or indirectly, the unifying issue for most of these educational improvement efforts is the effect of emotional and behavioral problems in children both on the student and educators (Blodgett & Dorado).

Trauma Informed Approaches and Social Emotional Learning

Multitiered System of Support (MTSS) is a common conceptual framework that supports preventive, early intervention, and treatment responses to increase resilience and address the social and emotional needs of all students. A trauma-informed approach shares core characteristics that are closely aligned with approaches to social emotional learning. Hence, the opportunity exists for school to integrate both approaches as a response to the most vulnerable students in our school systems. Therefore, teacher preparation programs must adapt the ways they prepare future teachers for the day-to-day classroom by addressing more than academic instructional methods: they must prepare teachers to consider trauma informed practices (e.g., resilience-building strategies, relationships) that reinforce social emotional competence.

### Bridging Trauma Informed Practices with Social Emotional Learning

Social emotional learning (SEL) is an integral part of education and human development. SEL is defined as the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions, achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions (CASEL, 2017). This translates into five core competencies or outcomes that support students' needs: (1) self-awareness, (2) self-management, (3) responsible decision making, (4) relationships skills, and (5) social awareness. SEL advances educational equity and excellence through authentic school family partnerships to establish learning environments and experiences that feature trusting and collaborative relationships, rigorous and meaningful curriculum and instruction, and ongoing evaluation (CASEL). Research demonstrates that social emotional competence is a well-established predictor of academic success, employment, higher income in adulthood, lower involvement in health and risk behaviors, and lower involvement in the criminal justice system (Durlak et al., 2011; Elias et al., 2007; Gabrieli et al., 2015; Payton et al., 2008; Suido & Shaffer, 2008; Weare & Nind, 2014). Understandably, when students have opportunities to develop and practice social, emotional, and cognitive skills across many different contexts, academic learning accelerates (CASEL).

The term trauma is defined as an individual and collective response to life-threatening events, harmful conditions, or prolonged stressful environments (American Psychological Association, 2013). When a child experiences chronic stress or fear, the survival part of the brain kicks into gear, resulting in increased activation of the limbic system and the fight/flight/freeze response, and decreases brain functioning areas responsible for information processing, planning, and other executive functions (Van der Kolk, 2014). Students are unable to learn new information when they continuously operate in a fear because the brain, when affected by trauma, is significantly limited in its capacity to receive, and integrate new information (Pawlo et al., 2019). Trauma-informed practices create safe, supportive, and nurturing environments that promote healing and resilience to mitigate the negative impact of trauma. Furthermore, these practices prioritize safety, trust, and empowerment in interactions with children and families (Bateman et al., 2013; Cole et al., 2013; Giboney Wall, 2020; Rowe et al., 2007). Essentially, trauma-informed practices are about the educators thoroughly understanding the impact stress and trauma play on students' physiological, psychological, neurological, and emotional responses (Portell, 2021).

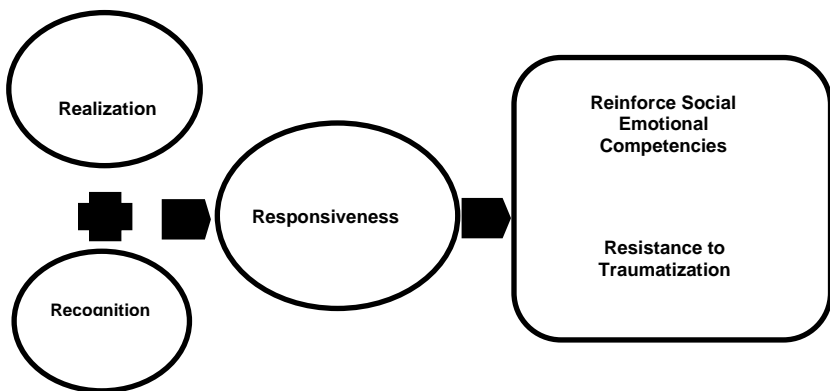
In schools with strong SEL practices informed by trauma response principles, building leaders have developed community mental health partnerships to address trauma. Resilience is one approach to addressing the social emotional

development and school success of individuals with complex trauma (Blodgett & Dorado). The resilience and positive psychology literatures reinforce that living well is not only about the cessation or avoidance of pain but about experiencing happiness and gratification through accomplishment (Blodgett & Dorado). Resilience can be defined as an individual's ability to function competently in the face of prolonged adversity and struggles with resulting trauma (Luther et al., 2000). Unfortunately, actions that support resilience are not automatically part of SEL practice (Blodgett & Dorado). Rather, many SEL practices support more contextual strategies (e.g., clear rules and consistency in rewarding rule adherence) to improve overall climate and self-management skills that support resilience (Blodgett & Dorado). While these are necessary strategies, they do not empower children to persist in activities that create meaningful and rewarding lives.

Every day, millions of students bring their traumatic experiences with them to school. It seems, then, that the answer is for schools to seek out trauma-informed approaches that have been tailored specifically to meet the individual needs of traumatized children. To a large extent, the basic tenets of SEL overlap with the principles of trauma-informed practices. However, SEL programs differ from trauma-informed practices on the level of intensity of instruction that is needed to help these students (Pawlo et al.). Unfortunately, there is a lack of research addressing these points of convergence between trauma-informed practices and SEL, which, ultimately, speaks to the lack of training in teacher preparation programs that is reported in current research. Providing educators with the skills to implement trauma-informed practices aligned with SEL can help reduce the overall level of disruption educators must manage while implementing instruction. In addition, teacher preparation programs should include training on key concepts like resilience and protective factors that are essential for children and adolescents to grow into resilient adults. These types of changes require teacher preparation programs to shift content towards learner-centered approaches that promote students to be experts on their own learning and their own lives.

Schools and educators need to be prepared for the strong emotional intensity students who have experienced trauma bring into the classroom (Pawlo et al.). Trauma-informed practices in teacher preparation are a relatively new way to create safe learning spaces where traumatized learners can re-shape their identity (Skiba, 2020). The Substance Abuse and Mental Health Service Administration (2014) provides a framework for implementing a trauma-informed approach within a system, organization, or program to build awareness of trauma beyond a prescribed set of practices and procedures. A trauma-informed approach is rooted in four assumptions: *realization*, *recognition*, *responsiveness*, and *resistance* to traumatization (SAMHSA). Trauma-informed care and practice is an approach recognizing and acknowledging trauma and its prevalence, alongside awareness and sensitivity to its dynamics, in all aspects of service delivery (Havenga, 2010). Given potentially traumatic events in childhood, teacher educators who *recognize* and are *responsive* to the needs of learners create classrooms that foster a feeling of safety and makes a huge difference in their ability to learn (Chafouleas et al., 2016). Figure 1 provides a framework of concepts that define, integrate, and expand a trauma-informed training approach with pre-service teacher preparation programs.

Figure 1. Trauma-Informed Framework for Teacher Preparation Programs



Adapted from the Substance Abuse and Mental Health Service Administration (2014).

The first assumption, *realization*, pertains to understanding how trauma can and does affect students, families, and communities. A critical first step in teacher preparation programs is to create thoughtful inquiry on ways to deepen shared understanding of trauma. To be able to help a traumatized learner, educators must possess a good understanding of the concept of trauma, and the events that triggered those traumas (Adubasim & Ugwu, 2019). Teacher preparation programs must be willing to invest in training pre-service teachers about trauma, how it impacts learning, as well as long-term effects if traumatic stress continues.

The second assumption is *recognition*. A trauma-informed approach aims to strengthen the experience for students in classroom settings by recognizing the unique experience of each individual and promote an organizational culture of social and emotional learning. In teacher preparation programs, strategies related to resiliency and coping skills can be taught to pre-service teachers, so they are prepared to manage triggers related to their students' past experiences of trauma and support healing and self-advocacy (Skiba).

Further, educators who recognize the signs of trauma are more informed and aware of how it manifests. In educational settings, trauma manifests in the form of microaggressions, culturally insensitive practices, biased discipline practices, institutionalized prejudice, and related assumptions about students and families that compromise engagement, connection, and community (Osher et al.). Often, educators engage in practices that perpetuate inequities rather than eliminate them. Therefore, teacher preparation programs should strive to expand pre-service teachers' equity lens to include a robust conceptualization of what equity means and how to achieve it. Sharing readings and having discussions with pre-service teachers about the prevalence of traumatic experiences and its impact on learning can start to build a consensus that trauma sensitivity is a way to address such initiatives. Essentially, this means addressing how racism and prejudice are incompatible with trauma sensitivity and social emotional competence. Teacher preparation programs should deliver explicit instruction in culturally responsive practices that strive to eliminate inequities and are fueled by various forms of traumas. Furthermore, an equity focus lens will encourage pre-service teachers to understand how trauma-

informed and social emotional learning approaches are designed to support student agency and equip people both individually and collectively to eliminate the sources of stress and inequity (Skiba). Ultimately, these types of discussion in teacher preparation programs lay the groundwork for growing an informal coalition of staff who are interested in trauma sensitivity and hope to begin a process of change in schools (Osher et al., 2004).

The third assumption, *responsiveness*, entails applying the principles of a trauma-informed approach and understanding that trauma can be experienced directly or indirectly. Principles of trauma-informed approaches comprise of safety, trustworthiness and transparency, collaboration and mutuality, empowerment, voice and choice, and culture, historical, and gender issues. As gleaned from the literature, many teacher preparation programs provide little training on trauma-informed approaches. As a result, teacher preparation should include opportunities for pre-service teachers to actively learn how to create settings that feel physically and psychologically safe. To establish and build trustworthiness with their students, they must also learn how to create clear expectations and use effective collaboration and communication skills.

Training in teacher preparation programs should include efforts related to learning how to adopt a whole-child approach using a transformative mindset that is *responsive* to the needs of individual students. Educators who are *responsive*, use a transformative mindset to consider the impact of adversity, including implicit biases, prejudiced beliefs, racism, and other forms of institutionalized privilege, as well as the need to foster well-being, resilience, and equity in their classrooms (Gregory & Fergus, 2017; Eberhardt, 2019). For example, an educator with a transformative mindset considers whether the purpose of a behavior may be a way of coping with a traumatic experience and replaces negative labels (e.g., triggered by authority figures) with definitions of the behavior (e.g., displays a strong emotional response when interacting with someone perceived to be in a position of power). In comparison, more traditional mindsets take students behaviors at face value and assume that the behaviors are purposeful and even personal. For instance, yelling at a student might trigger responses of fear and cause the student to react, such as shoving books off the desk or yelling back in anger, or respond by shutting down and withdrawing. The educator may use negative labels to describe the behavior (e.g., manipulative, lazy, resistant, non-complaint, attention-seeking). Frequently, educators begin with good intentions, yet they lack self-awareness and understanding of their own mindsets and their students, particularly under stress. Additionally, they make lack awareness of implicit biases and prejudiced beliefs that interfere with their ability to respond to students using strategies that welcome and appreciate individual and social identities (Steele, & Cohn-Vargas, 2013).

The final assumption is *resisting* re-traumatization. Pre-service teachers who feel ill prepared to create a safe learning environment will place students who are exposed to trauma at risk to struggle academically, socially, emotionally, and physically (Foreman & Bates). Furthermore, students are at risk for being re-traumatized when their behavior is first met with discipline instead of seeking to understand what is going on with the student. For example, a teacher may view a student wearing a hat as disrespectful and repeatedly tell the student to take off the hat without realizing the hat is the only thing the student has from their father, and it is the anniversary of the father's death. Educators may inadvertently retraumatize their students without knowledge of how children are potentially negatively impacted by exposure to trauma. Within a trauma-informed approach, pre-service teachers should be taught how current practices might inadvertently trigger or re-traumatize those they teach (Foreman & Bates). Trauma informed approaches understand the

dynamics of traumatic stress and emphasize safety, strength building, and skill acquisition rather than symptom management (Kezelman, 2014).

Programs must also address adult learners' social and emotional competencies and well-being. This includes self-and social-awareness, relationship skills, and self-care. Educators with strong, social and emotional, and cultural competencies are able to build strong relationships, connect with students and families, and remain regulated if tension arises (Osher et al.). In comparison, educators who experience unhappiness and high levels of stress and anxiety reduce their working memory and compromise their ability to *recognize* and *respond* with empathy to student needs (Osher et al.). Teacher preparation programs that focus on educator well-being convey to pre-service teachers that a successful learning environment relies on relationships between teachers and their students. Carello & Butler (2015) outline strategies that teacher education programs can implement to reduce traumatization to learners. These include strategies such as previewing material for appropriateness and eliminate content that is likely to shock or disturb students impacted by trauma. Teacher education programs can also train pre-service teachers how to use prompts to warn students of what to expect in terms of content, severity, and duration. In addition, pre-service teachers should learn how to conduct check-ins with children to help determine how they are doing emotionally and where adjustments are needed. Likewise, teacher education programs can offer ideas around policies and procedures that help learners avoid shame when participating in assessments. Other strategies that are beneficial for pre-service teachers is to learn how to respect students' own limits and provide support how to take responsibility for their own well-being. For example, a student may be reluctant to participate in a discussion on difficult material, which may be an instance of self-protection rather than resistance (or lack of preparation) to that discussion. These are important considerations within teacher preparation programs to ensure educators learn how to construct safe and inclusive learning environments. Finally, pre-service teachers should learn how to solicit feedback from their students to improve the safety and comfort of the classroom environment (Carello & Butler, 2015).

### Conclusion

Teacher preparation goes beyond development of technical competence (Skiba). In a rapidly changing society with technological advances and growing inequalities, teachers must have the opportunity to build their knowledge and skills to make informed choices and improve their students' lives (Adult Learning Australia, 2020). For effective learning to take place, teacher education programs are obligated to maximize opportunities for educators by providing suitable environments and training on effective classroom practices. Given, there is a lack of standards of what should be included in teacher preparation programs as it relates to trauma-informed approaches, teacher preparation programs would benefit from a set of uniform practices that teaches educators about trauma within a learner centered approach. Training programs that are comprehensive, theoretically grounded, practically focused, and seek to align safety, choice, and collaboration may contribute to successful student outcomes (Skiba). Equally important, teacher preparation programs must provide educators with skills to address vicarious trauma, or compassion fatigue. Like their students, beginning teachers often experience social isolation, and for many, economic hardship. By preparing teacher educators to address trauma driven behavior with their students, they can, at the same time, help them deal with their own anxieties and stressors (Yeager & Walton, 2011).

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# Navigating Change and Transformative Learning: Cross-Cultural Reflections on an Intensive English Program for Teachers

by

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## Abstract

*The work presented here focuses on an Intensive English Program (IEP) within the United States. Our work explores the program's rapid transition to online instruction and the implications for post-pandemic instructional design. In particular, the work centers on a group of eight English language instructors from Nicaragua who were teaching ESL at the Centro Cultural Nicaragüense Norteamericano while also taking U.S.-based English classes concurrently. Insights are provided from the perspectives of both the Nicaraguan ESL teachers and their U.S.-based instructor. Using Mezirow's (2013) ideas surrounding transformative learning as a backdrop, we discuss how the teacher and adult ESL students formed new understandings and perspectives while teaching and learning during the COVID-19 Pandemic. Further, we explore how these new understandings warrant a shift in approaches to teaching and have the potential to translate into marked changes in how we work with adult language learners.*

A typical day teaching an English as a Second Language (ESL) class that involved a classroom, desks, chairs, boards, and students rapidly became a luxury that could not be afforded following the outbreak of COVID-19. The pandemic forced the world population to find new ways to carry out their daily tasks and improve their productivity during unprecedented times. It also significantly changed the course of education and instruction entirely. Like many students worldwide, adult ESL students were dramatically impacted by the sudden switch to online courses due to the COVID-19 outbreak. In attempts to reduce the spread of COVID-19, schools and universities worldwide were shut down abruptly in spring of 2020, impacting over half the world's student population (UNESCO, 2020). According to Azoulay (2022), around 1.5 billion students and youth worldwide have been affected by educational institution closures due to the pandemic. Because of the emergence of COVID-19, teachers, students, and institutions were faced with an unprecedented challenge. This article aims to describe the online learning experiences of a group of adult Nicaraguan ESL students working to continue teaching English courses in their home country while taking classes with a U.S.-based university and instructor through online Zoom classes. This article details the students' and teachers' experiences, provides several practical implications for students, instructors, institutions, and administrators, and offers possible recommendations to improve the online learning experience.

The United States accommodates over one million international students learning English as a second language (ESL) annually. They make up nearly 6 percent of the country's higher education population and contribute over \$45 billion annually to the U.S. economy (Hartshorn & McMurry, 2020; IIE, 2022). Many educational institutions in the United States offer Intensive English Programs (IEPs) designed for pre-admitted international students for whom English is not their native language (Matsuda et al., 2017; Peregoy & Boyle, 2017). IEPs, in nature, focus mainly on international students who are studying to meet language proficiency requirements for admission into either undergraduate or graduate programs

(Matsuda et al., 2017). During the 2020-2021 academic year, there were approximately 39,352 international students studying in IEPs in the United States (IIE, 2022). Students from Japan, China, France, Saudi Arabia, Mexico, Colombia, Germany, and Italy topped the list of students in IEPs. The number of students registering for IEPs in the U.S. dropped considerably during the pandemic. For many international students seeking admission into degree-bearing academic programs, studying in an IEP provides them with the opportunity to enroll in full-time English classes to better prepare them, academically and linguistically for future university classes. In other cases, international IEP institutions require their ESL teachers to obtain a certain level of English to secure their job positions.

The concept of transformative learning has guided research in the field of adult education. Learning is described as the process of understanding and appropriating a new or revised interpretation of the meaning of one's experience as a guide to action (Mezirow, 1993). Well in advance of the pandemic, Mezirow (1978) explained how transformative learning involves nudging the learner to assess, question, and challenge their understandings through critical reflection, leading to a transformation of ideas and perceptions. Likewise, critical reflections play a significant role within cultures experiencing rapid social change, in which traditional authority structures have been weakened. Individuals must be prepared to make complex decisions independently (Mezirow, 1994). Therefore, the use of transformative learning requires that learners are given suitable tools to think autonomously and form their own perspectives beyond the limitations of their previous rationalizations. Mezirow (1993) theorized that adults do not apply their old understanding to new situations; instead, they look at new perspectives to get a new sense of things as they change.

The principles supporting transformative learning theory are central to adult learning theory and provide a substantive base of support for new andragogy (Cranton & Taylor, 2013). Mezirow (1994) explained how the meaning structures that adults have developed over a lifetime become transformed. These meaning structures are considered frames of reference based on an individual's cultural and contextual experiences that influence how they behave and interpret events. Although developed almost 40 years ago, a transformative movement has evolved in formal educational settings throughout the years. Transformative learning must consider the sociocultural contexts of education, the need to help learners actively participate and engage with the concepts presented, and how these mesh within the context of their own lives (Schneppfleitner & Ferreira, 2021). Approaching learning in this manner allows for a critical examination and justification of new knowledge. The application of transformative learning theory provided a foundational understanding of how adult ESL students adapted to this novel situation under new conditions, especially during times of crisis.

### Creating a Virtual Learning Ecosystem

Historically, classes at English Language Center (ELC, a pseudonym) were taught in person. Technology was used in their classrooms frequently. Prior to the pandemic, teachers primarily used a document camera to project material as doing so created visuals that would make the learning process come alive for learners. Like many institutions impacted by COVID-19, ELC was forced to make the switch from face-to-face to online teaching within a matter of days. To maintain a structure comparable to face-to-face courses and keep students motivated, the ELC incorporated the Zoom platform for live virtual classes. Desire to Learn (D2L) served as the learning management system component for all courses. Teachers were able

to share documents using the screen-sharing option on Zoom and share teaching materials within D2L.

The work presented here focuses on an IEP within the United States. Our work explores the program's rapid transition to online instruction and has implications for post-pandemic instructional design. In particular, the work centers on a group of adult ESL students and their course instructor. The students were a group of eight English language instructors from Nicaragua who were teaching ESL at the Centro Cultural Nicaragüense Norteamericano. The group of ESL students were educational professionals who were required to take IEP classes to pass the test of English as a foreign language exam. They had to pass the exam to be able to teach higher-level intensive English courses in Nicaragua. The students participated in a strictly online course as they were abroad in their respective country.

The course instructor, Kimberly (a pseudonym), worked for and was located at an IEP in a rural Midwestern University in the United States. Kimberly, age 38, has been teaching at the English language center since August 2010. Throughout the years, she had many different roles both in administration and in teaching and mentoring. During the pandemic, she taught two online English classes to mostly Nicaraguan English students and teachers. As with many others who were forced to transition to virtual instruction, her first online teaching experience started at the beginning of March 2020, also signaling the beginning of everyone's knowledge of the pandemic.

### Perceptions of Online Learning

Adult learners were faced with immense pressure during the pandemic. Adult learners found it difficult to balance their responsibilities and classes. By the same token, teachers and workers in other professions had a hard time balancing the new demands of working from home. This was exacerbated during the pandemic as many took on caregiver responsibilities while simultaneously attempting to meet career demands. Globally, people struggled with job insecurity, health scares, and lockdowns while navigating new technologies. The teacher and students we interviewed described their unique experiences with using new technologies for ESL teaching and learning and how they were impacted both positively and negatively.

#### Flexibility

Most participants stated that online learning provided them with the flexibility and accessibility they needed during the pandemic. It was also ideal to continue their education in a comfortable and safe environment. For example, Emma explained that she does not feel the need to take in-person classes and that taking online classes has given her comfort and accessibility. "I don't feel the need to go to a physical place or to have the essential classes of face-to-face. I really like having classes online, you can be at your house, you can have your computer, you can use different applications". Other participants also shared the same view. Especially the students who value the time and costs it takes to travel to a different country to take IEP classes. Dhawan (2020) contends that online learning is reportedly a more practical and affordable alternative to traditional education, as it can be accessed by students from remote and rural locations. This is particularly of note because lockdown restrictions varied globally.

A feature of online learning that provided flexibility for both the instructor and students was the instructor's ability to record sessions. In cases of power outages due to the weather, participants were able to access recorded synchronous sessions and watch them later in the D2L platform. Kimberly recorded sessions and uploaded them on D2L when some students were absent. Students benefited from

the recordings when they needed to review content, or they were unable to attend due to illness or internet access issues. Kimberly stated:

I think also another advantage is the ability to record. So, in a face-to-face classroom, if a student misses a class, they miss class. Online, there's the ability to record. So even if a student is physically unable to attend at the time, they still have the ability to review the class and not miss the class.

Many participants stated that time is an important aspect that influences their attitude toward online learning. People living in remote regions can benefit from online learning since it saves the time and expense of travel. Adult students frequently struggle to manage their duties and studies. Because of the flexibility of online learning, professional learners have been able to choose courses that fit into their own schedules. Adult learners are independent and self-directing, as suggested by adult learning principles. Considering this, Knowles (1980) suggested that individuals learn more about the method of self-directed learning and less about the subject matter they are studying.

The pandemic caused a situation in which many people were forced to learn new technologies to stave off isolation and to participate in interactions for daily living. What occurred was akin to a crash course in using information and communication technologies. Many adults turned to YouTube as well as various online communities in their efforts to learn how to use the new technologies that became part of their daily lives. Post-pandemic, online learning's flexibility has allowed adult learners to find just-in-time training and courses that fit into their personal schedules. Rather than spending money on transportation, supplies, and possibly childcare, students can reduce that cost by participating online. In addition to being cheaper, it can also be more flexible, allowing learners to take classes at their own pace. The availability of multiple types of course content and recorded lectures, according to the participants, made online learning an appealing alternative. They might also complete their education at their own speed. Baxter (2020) established that instructors may give a range of educational opportunities to their students through online learning, which involves the use of both synchronous and asynchronous techniques and fosters self-directed learning and autonomy.

#### Students Perspectives on Internet Connectivity

In terms of ideas and intellectual framework, the adult learning experience differs highly from the conventional view of education (Merriam & Bierema, 2018). Their knowledge is often guided by their personal experiences, struggles, and skills acquired over the years, as demonstrated by the participants. Some students stated that they enjoyed discussing topics outside of the classroom material, specifically topics that were relevant to their daily and professional lives. Therefore, weaving relevant topics into the course material can be more engaging for adult learners. Competency and technology are the most common challenges faced by students when it comes to learning online (Hapsari, 2021; Salih & Omar, 2020). However, in developing countries, the learning environment is the most challenging aspect. Due to the instability of the internet connection in Nicaragua, the students experienced computer lags that resulted in them going in and out of the Zoom meeting. Logging in and out of a frozen screen until the internet functions properly can often waste valuable class time. Additionally, some students do not have tools that facilitate online learning. For example, Nicholas participated using his mobile phone, as he did not have Wi-Fi access at home, which can be cumbersome and costly. Frustration regarding unstable internet connection was common among many of the student participants. Connectivity issues cause students to miss valuable information, instructions, and homework assignments, which can demotivate students. This is

especially frustrating, as they sometimes cannot rely on a functioning internet connection.

A common issue that students faced was the time wasted trying to fix connectivity issues, troubleshooting, and repeating questions from classmates. Emma expressed her irritation with repetitive questions by stating:

In a previous class, we were taking advantage of the two hours, but in this class at the beginning it was like slow motion, but I would say that our teacher has improved a lot. Sometimes it's because some of our classmates, our co-workers are just asking and asking again the same.

Another challenge facing adult learners is that they find online platforms to be complicated (Layali & Al-Shlowiy, 2020). Since the start of the pandemic, there have been an influx of platforms focused on online learning, which can make completing education online seem daunting. Many adult learners face various challenges when it comes to completing their education online (Adedoyin & Soykan, 2020). Therefore, the Internet and computer self-efficacy play an important role in how students conduct their studies.

### Instructor's Perspective on Connectivity

Instructors were granted the ability to teach from the comfort of their own homes, increasing their sense of safety and security. However, as the IEP programs moved toward a more digital-based environment, many instructors had to re-evaluate their teaching strategies, with minimal preparation and training. Internet connectivity was the most common hindrance to learning online (Fauzi et al., 2022; Layali & Shlowiy, 2020). Even though a basic internet connection is usually enough for learning purposes, some digital activities require additional speed. For instance, videoconferencing requires high bandwidth to function properly. Kimberly, the instructor of the group of students in this study, described frustration with the IEP group's internet connectivity by stating:

With this particular group that I'm currently teaching, there are connectivity issues. This hasn't always been the case, but with this group, a lot of my, almost all of my students are in Nicaragua, and the internet connection is not great. Especially now it's their rainy season and that tends to cause problems for them.

Although the instructor mentioned connectivity issues with the group of Nicaraguan students, she also mentioned that she as well had technical difficulties with her internet. Aside from having multiple benefits to teaching online, the teacher described her teaching experience as being slower than face-to-face by saying:

So, we have of course that connectivity issue and it's not just for students, I've also dropped the class, you know, the internet's gone out for me, so that's been an issue. Aside from the internet, the platform has not always been reliable. Sometimes it, maybe it's the platform, maybe it's my computer, the age of the computer, but sometimes, you get that spinning wheel of death.

In addition, the lack of proper customization of the learning materials can prevent the teaching process from being conducted effectively. Furthermore, some students found that the instructor spent too much time instructing rather than encouraging the students to practice and participate. Kimberly expressed her frustration with the time it took to explain where the exam was:

Once you have everybody in the classroom then you have the "I can't get on the platform" or "I'm on the platform, but I can't find it". "I can't write". And so, for example, yesterday, what should have taken 20 minutes took

about 45 minutes, so that's 25 minutes eating into the time that should be there for instruction.

To cut down on wasted time and maximize their learning experience, students should take computer classes that are designed to teach them how to use programs such as Microsoft Teams, Zoom, and the specific learning management system being used. Kimberly used D2L to upload documents, post announcements, provide course material, post recorded sessions, administer quizzes, and tests, and most importantly create discussions.

#### Desire for Language Immersion Experience

Participants stressed the importance of hearing English from native speakers. Most participants agreed that learning English in an English-speaking country would provide ample opportunities to interact with people other than the primary instructors. Another participant reinforced the importance of interacting with people with different cultures, backgrounds, and accents. All the participants in this research are Nicaraguan, including Gabriela, who wished for an opportunity to interact with a wider cultural pool. She explained:

Maybe I would have the opportunity to know new people. As you know I had to travel to another country. Maybe I will have the opportunity to speak with the other kind of students. As you know right now my course is most, the majority are Nicaraguan too. So, I don't have the opportunity to interact with other people with other accents.

This finding is supported by Fauzi et al. (2022) whose respondents argued that they have the necessary knowledge to complete most tasks online, yet they also believe that speaking in a face-to-face setting is more beneficial. Similarly, Alzamil (2021) reported that online learning did not replace face-to-face classes. The students preferred to be in a traditional setting as they experienced various challenges when they took online classes. Some of these include missing the social environment and being physically inactive.

Though in-person immersion wasn't possible during this time, the instructor used discussion boards as a means for asynchronous communication. This seemed helpful, especially for adult ESL students who like to learn at their own pace. Self-directed learning is a significant thrust in adult learning and is considered a major phenomenon with implications for both the learning process and learner attributes (Merriam & Bierema, 2018). The forum allowed students to post and reply to anyone at any time.

#### Teaching Adaptations: COVID-19 and Beyond

During the beginning stages of the pandemic, many educators, like Kimberly, were not properly trained or equipped to handle remote learning. They were forced to adopt within a limited time frame without proper infrastructure. As the pandemic continued, advancements in higher education have led to the emergence of new methods and techniques for teaching and learning, but many faculty members and students are still not familiar with how to use distance learning. They were forced to deliver the material they had in a "trial-and-error" method while also adapting to new technologies (Kamislı & Akinlar, 2022).

Education in the context of the pandemic and the unexpected end to face-to-face classes led to what Aqsa Arshad et al. (2020) called a cognitive transformation. The threat of the pandemic and the anxieties surrounding the changes it brought forth transformed the way learners perceive their environment. Lockdowns and social distancing policies psychologically, economically, and socially impacted communities, resulting in a preoccupation with fear and continually



fluctuating priorities (Aqsa Arshad et al., 2020). Using transformative learning theory (Mezirow, 1997), Aqsa Arshad et al. (2020) established a base to identify cognitive and emotional transformation among learners in these situations. Online learning continues to develop and progress post-pandemic. Thus, educational institutions need to find ways to refine the current software and online platforms to suit their students' needs, particularly for ESL teaching (Hakim, 2020). For instance, Gabriela found the instructors' use of the Zoom platform to be particularly helpful to have a better grasp of grammar and pronunciation. The class instructor used the chat function to explain grammar, clarify meanings, and write down the correct pronunciation of difficult vocabulary words. She would also use Zoom breakout rooms to group the students to answer questions in the textbook. Furthermore, she would use Zoom's text function to write on the right side of the virtual textbook to clarify sentences. The findings show that online conversations taking place through Zoom and other platforms can flow in a way that can replicate face-to-face classes, depending on the teacher's methodologies.

Additionally, zoom provided users with a chat function that is easily accessed while the class is in session. Kimberly heavily used the chat function to explain grammar or simply to clarify pronunciation. The students in the class also frequently used the chat function to ask the teacher questions for clarification, or simply to use emojis to interact when someone is speaking. The Zoom chat function was used as a virtual blackboard which was helpful to overcome online learning barriers. Besides breakout rooms and the chat function, Kimberly used the shared screen option to display the textbook, play videos, and present worksheets. She was also able to highlight, draw and write notes on the screen to clarify meanings. The shared screen option also allowed students to present and discuss topics in English which helped them improve listening, speaking, reading, and writing.

Adapting to online learning has been an ongoing challenge for educators and students, but growth opportunities are abundant. Alshammari (2022) adds that English speaking is the most challenging skill to teach via online learning due to the lack of interaction between the students, as most of the students prefer to communicate with the instructor, which can limit their English-speaking development. This notion is echoed by Fauzi et al.'s (2022), assertion that students prefer to learn speaking skills in a face-to-face learning environment. Therefore, educators should creatively engage their students in e-speaking activities, such as e-role play, providing them with adequate opportunities to verbally communicate their ideas, agreements, disagreements, and opinions about a topic. Since the COVID-19 restrictions, teachers have become more adept at mixing online activities with classroom activities, removing traditional tests from the assessment process, and introducing virtual projects as ways to measure learning.

### Empowering Learning Communities

Using smartphones in language practice tasks establishes a valuable means of assisting ESL learners to connect, both culturally and socially, with fellow classmates, and new acquaintances (McClanahan, 2014). Irudayasamy et al., (2021) claim that digital assistants and mobile phones are being used by teachers and students to help them learn English, they should also be used by those who are seeking to improve their skills as second language learners. For example, Nihayati and Indriani (2021) maintain that educators can use social media for online ESL learning by utilizing WhatsApp, a direct messaging mobile application. According to Layali and Al-Shlowiy (2020), using mobile technology has enhanced students' academic communication. It allowed them to ask questions and seek clarification to problems. WhatsApp groups can be a useful method for learning the English

language (Halim and Sunarti, 2021). A WhatsApp group can serve as a bulletin board to post questions or suggestions, as well as to encourage students to interact with one another. The platform's ability to provide two-way communication enables students to share relevant documents, including PowerPoint and Word presentations as well as images, videos, and links. Using social media tools can also aid adult ESL learners in developing their communication skills. Multimedia and digital technologies have the potential to engage students in learning in a highly student-centered and collaborative manner (Peregoy & Boyle, 2017). Besides being able to communicate with each other and being able to use the internet, it is also recommended that students use the platform as a tool for increasing their knowledge of technology to meet the needs of the 21<sup>st</sup> century.

Instructors can also benefit from online communities, not only to encourage student interaction but also to connect with fellow teachers. Mercado and Shin (2022) contend that the increasing popularity of social media platforms has allowed teachers to interact with their students and colleagues and develop their own content. It has also allowed them to join professional learning communities and receive immediate feedback from their colleagues, which can help them continue to improve their teaching. Therefore, teachers should consider the idea of creating local Facebook groups specifically designed for peer mentoring using social media.

In terms of student socialization and peer connection in this particular study, a majority of participants in this study did not use their mobile devices for peer communication, which can be of practical value to adult ESL students trying to learn a new language. However, they found the Zoom Breakout Rooms to be a helpful connecting tool and an enjoyable addition to the session. Breakout Rooms allow the class to be split into separate chat rooms to encourage discussion among the students. Through the breakout room sessions, students could freely collaborate and communicate, and improve their error checking, peer interaction, and learning. Moreover, breakout sessions can be used as a way to introduce dynamic problem-solving and active learning among adult ESL students. After the session ends, the participants can be taken back to the main room as a group. In traditional classroom settings, the ESL class teacher would create groups to discuss certain topics to exercise speaking and listening. By using the breakout rooms via Zoom the participants in this study were able to have that same social experience virtually.

#### Lessons Learned from COVID-19

Adaptation, technical literacy, social interaction, and motivation are pertinent themes that have dominated the teaching space since the pandemic began. Sukumaran et al. (2021) revealed that online teaching can influence the motivation of students to learn English. They also noted that having multiple learning tools and engaging content can help improve students' motivation to learn. Some of the popular online learning platforms that can help students improve their motivation include Quizlet, YouTube videos, Kahoot, and Live worksheet. Thus, it is essential that instructors have the necessary digital skills and knowledge to effectively teach online classes to increase engagement and motivation and to prepare them for times like COVID-19. Educators, more than ever before, vary in their technical skills, thus institutions, program administrators and practitioners need to offer comprehensive support. Before instructors can start offering online courses in general, they must have the necessary professional development to effectively navigate digital components. Additionally, online learning requires finding creative ways to replicate a social environment for the students through discussion boards, Breakout Rooms, e-role-playing exercises, and opportunities for discussion.

The global COVID-19 pandemic may have a lasting impact on education globally. It requires the establishment of effective measures to provide teachers with the necessary resources and technical support to improve their digital literacy. The increasing number of research studies on the effects of COVID-19 on the teaching and learning process has prompted educators and curriculum designers to rethink how they approach teaching and learning. Today's adults need to have the opportunity to use various technologies in such a way that it allows them to be creative, critical, socially active, and lifelong learners. In addition, it should enable them to improve their personal and professional performance (Alimardon, 2022). Teaching and learning are rapidly evolving through communication technologies that are quickly becoming a part of the information age in which we live.

### Recommendations

Educators have implemented the use of technology in classrooms over the years. E-learning platforms such as Moodle and Zoom have become integral to many classrooms today. Given our recent experience with COVID-19, having exposure to digital educational technologies is crucial for learners and educators. Technology integration may be considered the most practical and efficient method to enhance learning for ESL students during these times (Hakim, 2020). Notably, instructional technology played a vital role in cushioning this pandemic's effect on educational activities by functioning as the only instructional design, delivery, and assessment platform (Adedoyin & Soykan, 2020; Hakim, 2020). Therefore, strong technical skills are essential for adults seeking to improve their knowledge, skills, and English ability. The positive outcomes of the COVID-19 outbreak in the education sector have highlighted the need for more effective use of technology.

Furthermore, the absence of social connection has changed the way people learn. The social context is critical for establishing a greater knowledge of numerous elements of language learning, such as contextual usage. As a result, students are more reliant on diverse media and internet resources to complete their education. To meet the demands of adult ESL learners, instructors might encourage students to convey their ideas and feelings using built-in emoticons or other tools inside a learning platform. Zoom emoticons, for example, might allow students to react to particular activities or occurrences by raising their hands or smiling or frowning. Instructors could then ask students to share their status in response to certain teaching activities to gain some real time feedback. Moreover, teachers can provide their students with a variety of opportunities to participate in the learning process by creating virtual language roundtables so students can discuss various topics to enhance their speaking skills while creating a social environment to share ideas.

In terms of technical adaptation, institutions must provide adequate training on designing and building online materials, assignments, and exams. Students and teachers can benefit from unifying the modes of communication, whether via email, message board, or any other communication system. Using mobile applications to learn English can be a flexible and innovative way to learn English. Halim and Sunarti (2021) support the use of WhatsApp groups as a helpful strategy for English language learning. A WhatsApp group can function as an announcement board to share concerns or feedback, or to encourage students to communicate with one another. Since the platform allows for reciprocal communication, it can also allow students to send various documents such as PowerPoint, word, photos, videos, and internet links. Smartphones can also help improve the communicative abilities of adult ESL students.

Because of the increasing number of international students studying ESL online after the outbreak, the demand for online IEP classes is becoming more

popular as it is more accessible and affordable. Therefore, faculty members need constant support from the administration as well as ongoing professional development courses for practice. It is essential to obtain commitment and collaboration among administrators, as well as stakeholders. Otherwise, faculty satisfaction will not be well maintained. Using a quality framework, Picciano (2018) contends that "institutions should consider rewards (i.e., promotion, tenure, recognition, course releases for new course design and development, and opportunities for research and publication" (p. 80). Hence, rewards will increase motivation which in turn will enhance faculty satisfaction.

Although studies related to online learning due to COVID-19 are growing rapidly, more research is essential to illustrate adult ESL students' experiences with learning English online, how they adapted to new learning formats during a time of crisis, the technologies they encountered, and the experiences of their class instructor with teaching online during COVID-19. More research should be conducted to investigate adult ESL students' online learning experiences in other IEP programs.

Furthermore, additional research is needed to provide various observations and solutions to promote online platforms, including offering instructors training to guide students through these platforms expertly and merging synchronous and asynchronous learning to ensure a holistic learning environment (Baxter, 2020). For practitioners and leaders of adult education, it is important that they continue supporting the use of technology and developing digital literacy programs that meet the needs of adult learners. It is also important that educators have background knowledge about andragogical principles which can help instructors provide effective and efficient assistance to adult ESL learners (Zeligman, 2022). Additionally, further research is needed to gain a deeper understanding of the needs of adult ESL students and develop effective digital literacy programs for them. This could help improve the design and implementation of adult education programs that are applied towards adult learning theories such as andragogy and self-directed learning.

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Running Head: ILLINOIS TEACHER GRADUATE ASSESSMENT PROJECT Support  
of Student Teachers: Use of Counseling Strategies and Techniques

by

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### Abstract

*There has never been a higher need for our teacher candidates to be socially and emotionally supported as they begin their teaching career. Post-Covid classrooms place an increased demand on their time and talents. This project sought to provide professional development opportunities for student teachers in areas related to relaxation techniques, self-care, interpersonal relationships, and classroom management as they transition into the teaching profession. The research team was comprised of faculty in teacher education, higher administration, and school counseling, as well as an undergraduate and a graduate student. The team found new identity drawing on their transdisciplinary interactions that comprised of informal discussions, formal presentations, regularly scheduled meetings, and personal reflection.*

The numbers are shocking. Teachers, even experienced teachers, are seeming to leave the field one after the other in ever increasing numbers (Devaki et al., 2019; Glickman & Burns, 2021). Steiner et al. (2022) reported, "In January 2022, about one-third of teachers and principals reported that they were likely to leave their current teaching or principal job by the end of the 2021-2022 school year; this figure is up from about one-quarter of teachers and 15 percent of principals in January 2021" (p. 13). What could be causing this exodus? Low pay, long hours, increasing student needs, changing communities, etc. have always been factors affecting the work of our schools. While COVID-19 did cause a massive disruption in logistical and pedagogical practices around the globe (Steiner et al., 2022), we continue to see a steady increase of teachers leaving the profession and a decline of individuals entering the profession that predates the pandemic yet accelerated by a worldwide shutdown, the effects of which educators are still struggling to respond. This portion of the study will discuss the need for teacher reflection, goal-setting, and strategies for change to benefit teacher wellbeing not only for those currently serving today's students but, most specifically, those who plan to be the teachers of tomorrow – pre-service teachers who are experiencing not just a introduction to the newness of the teaching profession as a career path but an inflating need for wellness and balance that even seasoned teachers are struggling to understand and respond to.

### The Ever-Increasing Demands of Teaching

"You went into education to impact students' lives. You weren't wrong. You do have power to make lives better; not only students' lives, but also your own" (Saenz, 2012, p. 141). These words ring true as motivation for why individuals go into the teaching profession. Quite often, teacher search interviews yield such responses from teacher-candidates who are yearning to impact the lives of students they hope one day to serve. What often fails to come across in their training is that great care must be dedicated not just toward students but to their personal self-care as well. This unfortunately can diminish when reality smacks pre-service teachers when they

enter their clinical activities within schools directly working with students. “Teachers are the superheroes of the educational system and tend to be underrepresented and overworked. Survey shows that teachers face a high turnover rate in schools due to stress. Stressors at work and in their daily lives...” (Devaki et al., 2019, p. 35). While student teachers can view their mentor teachers as superheroes and strive to reach that status themselves with their own students, many underestimate the pressure, stress, and anxiety that is driving many of their future colleagues from the ranks of the teaching profession.

Glickman and Burns (2021) discussed a study completed in 2017 by the American Federation of Teachers (AFT) that found that 61 percent of teachers feel their jobs were stressful, while 58 percent listed stress within the profession as the main challenge to their own personal mental health (AFT, 2017). They further differentiate this pre-COVID pandemic data as compared to data collected in a study conducted by Kurtz in 2021 in an Educational Week article that showed the numbers of teachers feeling job-related stress jump to 92 percent. Steiner et al. (2022) goes on to say, “More teachers than other working adults reported burnout, and about half as many teachers reported feeling resilient to stressful events compare[d] with other working adults” (p. 5). Research in this area tends to point to a trend that is not changing, and teachers being servant-minded individuals need strategies to cope, and they need these tools early in their careers to form healthy habits.

The Oxford English Dictionary (n.d.) defines wellness as, “the state or condition of being in good physical, mental, and spiritual health” (paragraph 2). It goes on to define well-being as, “with reference to a person or community: the state of being healthy, happy, or prosperous; physical, psychological, or moral welfare” (paragraph 2). Referring to a molding together of these entries into a definition of teacher wellness/well-being, an individual’s goal should be to promote not just an absence of illness (Devaki et al., 2019) but a sense of being comfortable, whole, or balanced in multiple areas of existence. Inversely, “educators who experienced poor well-being were more likely to indicate that they intended to leave their jobs... Poor well-being is linked to a variety of negative physical and mental health problems” (Steiner et al., 2022, p. 20). Devaki et al. (2019) go on to state that successful strategies employed by an individual to stay well go beyond circumstances. “A reasonable person can be living in pain, scarred in the face of a challenge, or be physically handicapped. Wellness is a dynamic concept. You don’t just get well or stay well” (Devaki et al., 2019, p. 34). Wellness and well-being that brings about the healthiest balance is ongoing and able to assist the individual to absorb the rough and tumble events of life as well as life’s successes and celebrations. Therefore, to be the “superhero” (Devaki et al., 2019) that our students need, teachers must be made aware of the resources available to them to help mitigate the anxiety struggle to keep up with the rising educator burnout (Montoya & Summers, 2021). In a world where, according to a survey from Devaki et al. (2019), “[s]ixty-one percent of teachers stated that their work is ‘always’ or ‘often’ stressful” and “[f]ailing to address the mental health needs of teachers may affect their ability to address critical needs among students” (Devaki et al., 2019, p. 35), it seems critical to the educational professional world at large that something be done, and be done early, to address the mental health issues that plague the educators of today and those of the future.

### Personal Life and Professional Life Balance Starts Now

Montoya and Summers (2021) highlight a reality of teaching that often confronts educators from the first moments they step into a classroom, “too often, educators sacrifice their own well-being to support students’ social, emotional, and academic needs” (Montoya & Summers, 2021, p. 50). The job is all-consuming – if allowed to



be. The key is to learn how to manage one's own wellness in the early stages of career development, so efforts are focused and home/work balance remains. "[S]upports to help [teachers] cope with their job-related stress, such as social support from colleagues, family members, and friends; self-defined boundaries for work-life balance; and care activities" (p. 9) were most sought after by teachers surveyed by Steiner et al. (2022) to build a sense of efficacy within the profession. This study shows that strategies put into place not only to assist well-being in student teachers experiencing the anxiety of day-to-day service with students first time, but those same strategies can be employed and expanded upon to hopefully bring life-long and career-long practices to keep self-wellness in the forefront.

Efficacy, as defined by the Oxford English Dictionary (n.d.), highlights the "power or capacity to produce effects; power to effect the object intended" (paragraphs 1 and 2). Teachers go into the profession with the desire to be successful, and that success is often internally measured by the amount of time they put into the task of planning, preparing, delivering, and assessing instruction. However, to be considered successful doesn't have to mean that they lose balance between their personal and professional lives. In fact, research into job satisfaction by Steiner et al. (2022) found that job satisfaction is enhanced by a better sense of well-being within teachers, no matter what their individual background may be, keeping them in the profession. The argument could be made, then, that true efficacy cannot exist unless balance and self-care exist. True professional efficacy often comes when teachers can see the results within their students. "When teachers make gains in the areas of teaching efficacy and school connectedness, they may also be better equipped to effectively facilitate student achievement" (Mankin et al., 2018, p. 231). Tapping into efficacy, using the "I can do it," attitude, brings about a teacher, dedicated to their craft, who sees the fruits of their intended results: both student growth plus teacher well-being (Mankin et al., 2018). Mankin et al. (2018) go on to say that schools would do well to consider what their institution is doing to adjust the culture of their schools to assist and promote teacher wellness, thus increasing teachers' sense of efficacy in their job and their connectedness with self, and one another. The focus for a pre-service teacher or a teacher new to the profession broadens from only focusing on professional efficacy to include personal fulfillment as a part of their own sense of success.

Teachers take heart when their students do well, but there is also a sense of positive self-care that should include a teacher's sense of "a job well done". Making the teaching profession attractive requires an outward display of job satisfaction coupled with a sense of personal fulfillment that comes from an investment in well-being. If what teachers consistently project is the struggles with the doldrums of the profession, whether intentional or unintentional, those pricked with the thought of entering the field can easily be discouraged. "Improving the reputation of the teaching and principal professions might be an important lever for attracting a diverse group of future educators to the profession" (Steiner et al., 2022, p. 3). Finding professional fulfillment is one thing, but personal fulfillment requires attention paid to self-care, strategies and methods to reflect, regroup, and promote change. "[D]edication to working with students kept [teachers] in their jobs" (Steiner et al., 2022, p. 14). Dedication to self provides teachers ready and equipped to personally handle those jobs.

### Teacher Wellbeing Leads to Student Wellbeing

Blinder et al. (2017) state that "[t]eacher well-being is a crucial piece to the puzzle that is student achievement. By engaging in activities which help teachers learn how to recognize and manage their stress, they are better able to manage and serve their

students” (p. 64). If this is true, then a hard look at teacher wellness is not just a reflection on an individual but a reflection on the well-being of an entire educational organization. Teachers dedicated to their craft diligently work towards better student outcomes by honing skills that will improve the academic success and the social-emotional health of students; however, research points towards that true, wholistic efforts to promote educational gains must include the wellness of teachers (Blinder et al., 2017; Montoya & Summers, 2021). Montoya and Summers (2021) mention that as teachers experience balance and successful, enriching self-care practices their ability to better focus with intentionality on the professional tasks at hand which, at their core, are built on the foundation of supporting the students under their care. Therefore, “[a] teacher’s wellness gets reflected in the student’s welfare” (Devaki et al., 2019, p. 35). Support for the teacher means support for the student.

The World Health Organization defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 2023, paragraph 2). Using this as an operative definition of wellness, eliminating negative wellness factors must be matched with efforts to replace those factors with positive health and balance. “The allegation of current wellness research is that teachers who are both physically and mentally fit can bring about the excellent educational outcomes for students” (Devaki et al., 2019, p. 40). There must be tools and strategies put at teachers’ disposal to provide healing for stress, anxiety over an ever-increasing workload but also efforts for maintaining educator well-being. The earlier educators can employ these strategies, such as during pre-service teacher training, life balance and self-care become the norm rather than an anomaly. Research seems to indicate that “[a]ccess to some [mental health] services (or awareness of such access) appears to be less widespread among teachers than in the general working population. About one-third of teachers reported access to counseling, compared with about half of employed adults” (Steiner et al., 2022, p. 9). One could interpret this as a call for educational institutions to not only seek social-emotional supports for students but for staff as well.

#### The Need for a Measurement Tool

“Investment in teacher wellbeing contributes to improved health and wellbeing for teachers and students, and ultimately to positive learning outcomes” (Devaki et al., 2019, p. 39). If this statement is true, then it would be indicative for any efforts to address the wellness of students should include supports for those students’ teachers. Sadly, this is not often the case. In a study conducted by Panchal et al. (2022) for the Kaiser Family Foundation, a leading organization dedicated to providing independent information on health services across the nation, reported that 96 percent of public schools do provide at least one avenue for mental health services for students during the 2021-2022 school year. However, “[g]oing into the 2022-2023 school year, 19 percent of public schools have vacancies for mental health professionals. Among schools with these vacancies, 84 percent reported it will be somewhat or very difficult to fill these mental health positions” (Panchal et al., 2022, paragraph 14). This data, along with other reports on mental health services for students, show a growing need for mental health professionals in schools for students. The argument could then be made that if public schools across the nation are struggling to find support for student mental health needs, the lack of resources could be even greater to alleviate the mental health needs of educators. The need is still real. “Psychologists, educationists and counsellors should help to improve the wellness of teachers by providing guidance through organizing ... [various programs] related to their overall development of an individual [to] enhance the quality of life” (Devaki et al., 2019, p. 39). Resources, however, appear to be few and far between.

This leaves public education sorely lacking supportive services for adults when student mental health is already a difficult priority to address.

#### Employer-Supported Mental Health Resources for Teachers

Seeing the connective nature of teacher wellness to student wellness has been noticed by some school districts. Nevertheless, research studies show that even that can be found lacking, and the supports for pre-service teachers in developing coping skills could be even further behind among the list of priorities – resulting in what could possibly be a lack of confidence and efficacy of new individuals entering the profession (Mankin et al., 2018, p. 231). Nevertheless, in an article authored by Steiner et al. (2022), “[a]ccess to at least one employer-provided mental health support (e.g., counseling, employee assistance programs, peer support groups) was linked to better well-being for teachers and to the ability to cope with job-related stress and resilience when faced with stressful events for principals” (Steiner, et al., 2022, p. 17). In lieu of direct and ongoing mental supports for teachers, efforts to educate teachers currently practicing in the profession is, at times, addressed by a few school districts’ who have reported dedicating a portion of their regular professional development plan to help mitigate the impact of teacher self-care deficits (Blinder, et al., 2017).

Blinder et al. (2017) reported that teachers receiving professional development in mental health wellness topics such as mindfulness, trauma reduction, calming, stress management, and personal self-care found that training that matched the school culture and specific identified needs were most helpful. The surveys used in that study also went on to say, “[t]he information [was] presented in ways that are applicable to teachers regardless of subject area taught, or age of students in the classroom, and [has] been delivered to teachers at all levels of education: elementary, middle, and high school staff, as well as to pre-service teachers in both undergraduate and graduate programs” (Blinder et al., 2017, p. 62). Their study not only stressed the need for well-designed wellness supports for current teachers but also provides opportunities for pre-service professionals to gain that training as well. While professional development is an important vehicle for well-being to be shown as a priority, teachers also stressed the need for connection with professionals who share a similar story and set of needs.

#### Relationship Building and Dialog Among Teachers

Research conducted by Steiner et al. (2022) showed that while teaching professionals appreciated the efforts of school districts to supply wellness initiatives for their teachers, many of those initiatives fell short. “[S]upports did not address their needs, teachers did not have enough time to use them or using them would take time away from self-care activities they found more useful” (Steiner et al., 2022, p. 9). In the absence of meaningful support, it was found that teachers were discovering their own ways to cope with stress, relieve anxiety, and lessen the physical and mental toll of day-to-day struggles of teaching in today’s schools. Teachers within this study also reported a disconnect from supports provided by their districts to help, citing “[sixty-five] percent of the teachers we surveyed reported access to some mental health services through their employers. The remainder of teachers and principals reported no access to employer-provided mental health services or did not know whether they had access to such services” (Steiner, et al., 2022, p. 9). To what did research show that teachers tend to gravitate towards? Each other. “[S]takeholders are engaged in active discussion and reflection” (Blinder, et al., 2017, p. 61), meaning, giving teachers a chance to reflect and talk through their mental stress and anxiety showed to be a key to wellness. Steiner et al. (2022) went on to say that “[t]o reduce the stress of pandemic-era teaching, teachers and

principals reported wanting to focus on core job responsibilities and building positive adult relationships” (p. 2). Accordingly, the relationships that teachers developed with one other led some to indicate a more positive sense of satisfaction in the job as well as a desire to stay within the profession (Steiner, et al., 2022). Being that pre-service teachers often lack a network of positive, experienced mentors and colleagues in which to share their lived experiences in real time, the researchers in this particular study sought a tool that could be used by novice and/or student teachers that would serve not only to educate the participants on specific areas of wellness for them to be aware of but also guide them to use this tool to bring awareness to their own sense of increased professional efficacy and healthy personal self-care.

### Impact of Saenz

If there is a hope that pre-service teachers will enter the profession and stay there, their well-being should be shown to be a priority. “Teachers who indicated that they had access to at least one mental health support were significantly less likely to report intending to leave their jobs than teachers who did not indicate having access to such supports” (Steiner, et al., 2022, p. 17). This means that pre-service teachers, particularly those currently involved in clinical experiences in real classrooms in real time, must be given a reflection tool. This led the research team to the book, *The Power of a Teacher: Restoring Hope and Well-Being to Change Lives* by Adam Saenz (2012). Saenz states, “teach from a place of wellbeing... when we don’t maintain wellbeing in critical areas of our lives, we... ‘decompensate,’ that refers to a breakdown in the coping systems we keep in place to make our lives function. At the point of decompensation, information and knowledge about what we should be doing to live effectively becomes increasingly useless” (2012, p. 19). Creating a system of support for novice and student teachers became a passion project for the research team in this study. “[S]ocial and wellness and critical life skills are equally crucial to the success of our students (and the economy) as are traditional classroom courses” (Devaki et al., 2019, p. 35). Therefore, the tools created by Saenz and the powerful, personal story he shares about his own school experiences can provide pre-service teachers with an ongoing model to call the need for life balance throughout their teaching careers. The goal is to get these pre-service teachers connected to the students they are passionate about serving while at the same time instilling them with a tool to empower them to self-reflect and create personal change that leads to productive self-care. Saenz (2012) bases his model on five areas of well-being:

- Occupational Well-Being, defined as “learning to deal with workplace stress, building stronger relationships with your co-workers, exploring options to create a better work environment, and progressing towards your career goals” (p. 40). In the area of Occupational Well-Being, wellness encourages teachers to 1) “develop an effective community” (p. 40) and 2) “set and maintain good boundaries between work and home” (p. 42).
- Emotional Well-Being, defined as “the degree to which we are able to appropriately experience and express the wide range of emotions that are part of the human experience” (pp. 53-54). In the area of Emotional Well-Being, wellness encourages teachers to 1) “appropriate experience and express emotion” (p. 54) and 2) “practice requesting and extending forgiveness” (p. 56).
- Financial Well-Being, defined as “the ability to absorb financial stressors” (p. 70). In the area of Financial Well-Being, wellness encourages teachers to 1) “identify external factors that impact your finances” (p. 70) and 2) “identify internal factors that impact your finances” (p. 72).

- Spiritual Well-Being, defined as “capacity to integrate our beliefs and values with our actions” (p. 84). Spiritual Well-Being encourages teachers to 1) “link decision-making with life values” (p. 85) and 2) “share life with like-minded individuals” (p. 86).
- Physical Well-Being, defined as “the implication [that] our bodies can be free of disease, but we can still be unhealthy” (p. 96). Physical Well-Being encourage teachers to 1) “practice healthy nutrition” (p. 96), 2) “exercise regularly” (p. 97), and 3) “sleep enough. Sleep well” (p. 99).

Other research studies define additional areas, or “dimensions”, within their framework. For example, research conducted by Montoya and Summers (2021) added three other dimensions to their teacher wellness matrix: environmental, intellectual, and social. For the purposes of this study Saenz’s (2012) will be the model used for the personal and professional reflection, as well as goal setting for pre-service teachers.

While the five areas have individual definitions, Saenz (2012) stresses “the five areas are interconnected, which means limitations in any given area will, in turn, affect the other... areas” (p. 33). Not only is this tool used for reflection, but pre-service teachers participating in this study will be able to visually see areas of strength and weakness to set ongoing goals for change and personal development.

#### Practice of Reflection

Glickman and Burns (2021) point out in their research that “sometimes when teachers are down emotionally, they do not have much tolerance for ambiguity... they may be seeking practical suggestions as potential solutions” (Glickman & Burns, 2021, p. 21). This is why this study, and the efforts that drive it, call not just for an awareness of the need for well-being but a practical tool that will promote personal reflection, hopefully leading the individual to prioritize life adjustments in one or more of the focus areas to create balance. “The welfare of health encourages one to move towards awareness, education and individual progress” (Devaki et al., 2019, p. 34). This tool seeks to bring novice and student teachers to just that – awareness – by asking participants direct questions about how they view themselves in the light of a particular focus area and have a chance to explore their personal view with individuals with a common experience. Blinder et al. (2017) found that teachers who participated in activities that improved their mental health were those who actively participated – even teachers who were initially the most reluctant – in opportunities to speak with colleagues who could open up about “real-world examples of mindful practice in schools where students are similar to their own, being open with their own experiences of mindful practices and mismanaged stress, and by being empathetic to the teachers’ concerns” (p. 64). Glickman and Burns (2021) encourages teachers to “think aloud with teachers. By thinking aloud, you are modeling an open, problem-solving process” (p. 21). Saenz (2012) provides a vehicle for that reflection.

Each chapter devoted to a particular well-being focus area opens not only with a real testimony about a teacher’s lived experience, but adequately defines the meaning behind each of the five focus areas and what participant-readers should be considering as they attempt to engage in self-reflection in that area. At the conclusion of each chapter, pre-service teachers were asked to complete a *Teacher Wellness Inventory*<sup>™</sup> that will walk the reader through several direct statements germane to that focus area. Participants are asked to mark each statement as true or false, with a numerical score calculated at the end of each exercise based on the number of true statements. Scores are recorded on their individual *Wellness Wheel*, creating a visual display of balance as they complete each of the five focus areas. The size and shape of an individual’s wheel “reflects the degree in which we are

operating at our full potential” (Saenz, 2012, p. 117) with the goal of creating a larger wheel that is more circular in shape.

### Goals for Change and Growth

Resulting from this step of reflection, the participants are encouraged to take the next step from reflection to personal action. Using Saenz’s (2012) a Change Organizer™ for each focus area, participants are posed with specific yes/no questions identifying whether personal deficits exist, informed by the reflection that was facilitated within the Teacher Wellness Inventory™. If the participant gives an affirmative answer that a factor within that focus area needs action, a level of priority is assigned to that question, leading to specific goal statements (listed as action points) to promote wellness in that area and eventually better affirmative scores on the Teacher Wellness Inventory™ in the future to indicate better balance between all five areas. This process allows, for the purposes of this study, pre-service teachers to see strengths and weaknesses; evaluate the nature of those strengths and weaknesses; and create a plan of action that will help use strengths to lessen those weaknesses. Devaki et al. (2019) found in their research that often self-responsibility was rated higher than any other dimension of mental health. This tool was selected to promote that self-responsibility. “[Teachers] are aware that they are responsible for every aspect of this life... they are the dominant force in determining their rate of recovery from an illness” (Devaki et al., 2019, p. 37). Pre-service teachers need to see the importance of reflecting and goal setting to see a better wholistic sense of wellness.

### Methodology

In mid-October of 2022, forty-two novice teachers, defined as preservice teachers in a semester of half-day teaching prior to student teaching, were brought together to ascertain their social and emotional well-being. The session began with the novice teachers completing a Likert short survey where they indicated their level of agreement (*Strongly Disagree*, *Disagree*, *Agree*, and *Strongly Agree*) to a series of four statements. The comments they responded to were: 1) I am being mentored by my CT, 2) My CT allows me to try my new ideas and strategies, instead of always insisting on using their ideas, 3) I feel my CT wants me in their classroom, and 4) My CT often provides verbal and written feedback on my teaching. Students were also asked if they would like to, if possible, stay in their novice teaching placement for their student teaching experience. On the back of the survey, students were asked to write down the stressors they were currently encountering.

After students completed the survey, a panel of four student teachers discussed their current teaching experiences. Novice teachers were able to ask questions at the close of the panel portion of the session. To conclude the afternoon’s session, a school counselor faculty member presented some self-care strategies and invited the novice teachers to participate in the research support system for spring 2023.

Unfortunately, the number of student teachers participating in the study for spring 2023, was only two, one being a research participant. However, these two student teachers and the additional researchers met six times starting in March through the end of April (Estes, et al. 2023). At each of these meetings, the student teachers and research members discussed one of the chapters from Saenz’s *The power of a teacher: Restoring hope and well-being to change lives* (2012), ate a light dinner, and participated in open discussions. At the conclusion of each of these meetings, student teachers had the opportunity to select an item to assist with their personal well-being.

## Findings

The mean student response on the front of the survey, from the fall 2022 meeting was 3.42. The survey was given again at the end of the 2022 fall semester and the mean fell to 3.33. Recall that the novice teachers were asked to also state their current stressors.

Two researchers independently analyzed the current stressors indicated by the novice teaching at the fall meeting. They independently created codes based on the statements provided by the novice teachers. After completion of the initial coding, the researchers collaborated and determined codes. Researchers then re-coded and arrived at these findings where the percent represents the percent of the participants mentioning that category/subcategory. The four highest occurring codes were Communications and Expectations (40%); Mental Health Needs (38%); Novice Teaching Semester Workload (33%), and the edTPA (31%) [Note: since the time of this survey, the edTPA is no longer required during the semester of student teaching]. The researchers felt that it was interesting to note the breakdown of the Mental Health Needs fell into the following subcategories: Time Off (3%); Anxiety (14%); Assessing Mental Health (10%); Coping Strategies (5%); and Crisis Situations/Responses (10%). Of the listed findings Anxiety, Coping Strategies and Crisis Situations/Responses are naturally addressed in group therapy. The remaining topics were: Busy Work (19%), Space for Peer Community (17%), Resources/PD Opportunities (12%), Financial Worries (10%), edTPA Prep course (7%), Content Test (3%), Job Preparation (3%), and Site Placements (3%). Student Teacher Choice of Item for Well-Being

Recall that student teachers were able to choose an item to assist with their well-being at the conclusion of each of the six meetings held in the spring of 2023. The items they chose were jigsaw puzzles; candles; bath bombs; drawing pads with sketch pencils; coloring book with colored pencils; and journals. Items not chosen were items for a classroom such as student books.

### Researcher Participant Reflection

Recall that one member of the research team was a student teaching participant. At the conclusion of the project, they were able to share the following:

*During these stages, I experienced overwhelming emotions that had me reflecting on what I experienced. The first stage began the summer before novice teaching. During this time, I began to study for my content exam while working 40 hours a week as a camp counselor. I felt a lot of pressure to pass on the first time because I didn't have the financial resources to take it again. During that summer, I felt overwhelmed when studying for the content exam. Another thing that was given as a recommendation was to reach out to my cooperating teacher before summer began. This stage is where I started to experience what it was like to become a teacher in the current year.*

*The second stage occurred from August to December for my novice teaching. One of the smaller challenges that occurred was having to balance the teacher schedule and going to sleep at a reasonable time, that was a big change for a college student. But once that change occurred, I felt more energized and ready for the next day. Another thing I had to balance was working a part time job with my full course load while completing my hours for novice teaching. That semester I withdrew emotionally and started to work on autopilot just trying to make it alive. Until my professors and peers noticed the changes in me and started to ask if I was okay. That's where I realized that I couldn't balance everything and that I needed to ask for help. This all occurred when I finally started to reflect on*

what was going on emotionally, physically and financially. There were a lot of challenges that occurred that I hadn't experienced before that included doubting myself. I doubted if I was going to become an effective teacher. I doubted if I truly could make an impact on the children because this was the first time where I experienced failure. I witnessed a fight occur in front of me and I froze as a teacher. I left the area crying because I wasn't taught in the textbook how to handle a situation like that. I felt extreme disappointment in myself that I couldn't help a child. However, I started to realize that I needed to communicate with my cooperating teacher about these doubts. I found amazing support from my cooperating teacher and amazing advice on what to do. However, that only occurred because I realized that I needed help after self-reflection. That was hard to admit as a 22-year-old that I needed help because I was drowning.

My last stage occurred during my student teaching semester. I was extremely privileged to stay in the same placement that I had while novice teaching. Once student teaching began, I realized that I couldn't balance working while being the school. I wanted to focus on truly immersing myself in what teaching will look like for me. I was privileged to not have to work, however that is not the reality for others. I have always been independent throughout college especially working more than part time but this semester I couldn't do it. It was extremely embarrassing to say that I relied on my mom during student teaching. Every month I remember feeling overwhelmed because I didn't know if I would have enough money for food, rent, or even gas to get to my placement. That was an occurring thought that occurred every single day during student teaching. One of the things I'm extremely grateful for was the amount of support that came from my cooperating teachers. They helped me grow my passion for teaching and realized the importance of becoming a teacher. They allowed me to try new things and that included allowing me to fail. They always allowed me to reflect because they had created that type of environment for me. Lastly, during this semester my cooperating teacher taught me the importance of balancing being a teacher. I need to make sure that I'm always checking up on myself emotionally and physically.

Throughout the stages, I interacted with social media and that influenced how I saw the teaching profession. During the second stage, I had gone into a rabbit hole of only seeing the negative side of teaching. It slowly affected if I wanted to become a teacher after graduation. One day I realized that I could use these experiences on social media as a reflection to help me become more aware of what's going on in the teaching profession (Aliatis Carranza, personal reflection, 2023).

The research team was purposefully composed of faculty members from teacher education, higher administration and school counseling and an undergraduate student from teacher education program and a graduate student from the counseling program. It was deemed that this well-rounded team would be able to provide sufficient support and expertise to the student teachers. In fact, this research team and student teachers formed a tight bond by the end of the research period. Additional benefits of this team were that students and faculty: received social and emotional support from each other; developed a sense of identity that allowed them to develop ideas and solutions that might not have arisen individually; and interactions helped individuals to gain different perspectives on the issues, support in common concerns, and learn new ways to deal with problems (Carnegie Mellon



Eberly Center for Teaching Excellence and Educational Innovation, 2024). One participant drew on the work of Antola Crowe et al. (2013) when they stated:  
We engaged in a transdisciplinary process in which the problem or issue became the primary focus. Thus, the contributions of our individual disciplines were determined by the issues we addressed rather than through the lenses of our professional backgrounds.

### Conclusion

Charlotte Danielson (2008) wrote in her landmark research about teacher effectiveness, “Teachers’ awareness of their own areas of strength and need for growth is the first step towards professional improvement. Teaching is highly complex and demanding work; for many teachers (particularly new teachers) simply making it through the day is a tall order” (Danielson, 2008, p. 22). While Danielson’s research focuses on the development of professional practice in schools and has since become a tool for evaluating that practice, her ideas ring true in the area of teachers’ awareness of their own wellness and their personal empowerment to do something about it. Not only can these efforts increase the probability that soon-to-be teachers will find fulfillment within their chosen profession, but self-care stands a chance of not being neglected as a part of the process. Saenz (2012) seems to agree with this concept. “I love those moments [of finding personal value] because they remind me of a very simple, but fundamental truth – one that is crucial for teachers to know and remember. In a nutshell, that truth is this: identity and perceived value impact function and behavior” (Saenz, 2012, p. 16). Preparing tomorrow’s educators is more than just the right pedagogy, the correct lesson plan model, the most effective assessment practices, and the like. Preparing tomorrow’s teachers also needs to focus on maintaining their personal humanity as they throw themselves into the all-important world of teaching. May we successfully teach them to find balance and fulfillment in their efforts, supporting students as well as self.

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## Teacher Leadership Enactment and Core Dimensions

by

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### Abstract

*This paper explores the growing concept of teacher leadership as a global educational movement, drawing on recent literature from diverse contexts. Despite widespread discourse on the topic, the definition of teacher leadership remains argued, shaped by geographical, cultural, and temporal factors. Various studies highlight that understanding teacher leadership is complex, revealing significant variations within a single country. Critical dimensions of teacher leadership include cultural perceptions and the role of agency, where educators actively shape their practices to foster positive change. This exploration emphasizes that effective teacher leadership involves the voluntary exercise of agency—going beyond requirements to enhance educational environments and student learning. Through a review of emerging themes, the paper invites reflection on the core characteristics of teacher leaders and factors influencing their enactment in school settings, ultimately advancing the ongoing conversation surrounding this dynamic and the essential aspect of education.*

The study of teacher leadership is not confined to the United States but is a global topic of interest in education. This is evident in the growing teacher leadership literature from Europe, Asia, and Latin America. The active nature of this topic is further underscored by the ongoing research exploring leadership in countries such as Canada, China, Spain, Colombia, Turkey, Egypt, Saudi Arabia, Qatar, and more (Chaaban Sawalhi, 2021; Dasci Sonmez et al., 2024; Fernández Espinosa & López González, 2023; Guyen et al., 2020). However, exploring the conceptual elements that define teacher leadership can be challenging due to the variations in its core components. This challenge arises from geographical and cultural differences and shifts in how teacher leadership is perceived over time (Harris & Jones, 2019; Schott et al., 2020; Trigueros et al., 2020). Variations in understanding what it means to be a teacher leader can be found within a single country's literature (Berg & Zoellick, 2019) and across different periods as new perspectives emerge. Hence, conversations about the nature of teacher leadership are framed in terms of how the terminology evolves with time. As research unveils new interpretations of teacher leadership, these findings are included in the current literature. In fact, a significant number of articles represent this trend—for the scope of this paper, 2019-2024. Several of the papers present a disclaimer that the concept of teacher leadership is extensively debated and lacking consensus. For instance, several researchers, such as Zainal and Matore (2021), Hunzicker (2019), Gningue et al. (2022), to name a few, allocate an entire section of their papers to discuss how influential papers talk about teacher leadership.

Some researchers lament the lack of consensus on the definition of teacher leadership (Hunzicker, 2019), arguing that this lack of consensus does a disservice to researchers and to the validity of the existing literature on this topic (Berg & Zoellick, 2019; Shen et al., 2020). However, one could imagine that creating a permanent and official concept for teacher leadership may quickly become a limiting factor. The field of education is ever-changing, and this dynamism presents opportunities for growth and adaptation. Perhaps defining core dimensions of

teacher leadership best serves researchers and educators in identifying areas and opportunities that lead to the enactment of their potential for teacher leadership.

One of the key dimensions examined in the literature pertains to its cultural and agency-related aspects. Educators' self-perceptions are closely tied to their roles, as evidenced by a comparative study of educators from various countries (Hammad et al., 2023; Pineda Baez et al., 2020) within different cultural contexts. For instance, a study conducted in Canada provides a legal framework outlining the essential components of teacher leadership; however, research from other settings raises questions about who genuinely legitimizes the roles of teacher leaders (Berg & Zoellick, 2019). Is it possible to embody leadership without being consciously aware of it? This paper presents an exploration of recent literature (2019-2024) to provide emerging themes exploring the core characteristics of teacher leaders and the necessary factors involved in the enactment of teacher leadership in school settings.

### Core Dimensions of Teacher Leadership

**Agency-** Teacher leadership is fundamentally about stepping up and making positive changes. The literature consistently highlights that a key aspect of teacher leadership is the voluntary exercise of agency—going beyond basic requirements to enhance teaching practices, school environments, and student learning (Chaaban & Sawalhi, 2021; Granville-Chapman et al., 2024; Hunzicker, 2019). Teacher leadership embodies the empowerment to exercise agency effectively. For example, in Mundorf et al. (2019), a teacher leader reported exercising her agency to revamp her teaching curriculum upon realizing that the existing materials lacked relevance to students' interests. This initiative was not a required task but stemmed from personal and professional agency informed by students' needs. Berg and Zoellick (2019) provide a more nuanced perspective on how agency manifests in the actions of teacher leaders. Their study indicates that teacher leadership initiatives sometimes arise from personal concerns educators observe in their classrooms and schools. These actions are legitimized as teacher-initiated. Conversely, some teacher-leader projects stem from a top-down approach. Berg and Zoellick (2019) argue that this occurs when a principal asks a teacher to assist with an academic project, raising the question of whether this constitutes teacher leadership or merely an act of compliance. Regardless, the exercise of agency remains crucial to teacher leadership and is integral to most contemporary definitions of the concept. Rather than occupying formal positions within a school hierarchy, teacher leaders are respected educators who inspire admiration through their professional practices (Çagatay et al., 2021; Stein, 2020; Tångring & Öhman, 2023).

**Influence-** Teacher leaders navigate complex situations skillfully, often proving more effective than those in formal leadership positions (Webber & Nickel, 2021). Because they are not bound by the authority of a formal role within the school's hierarchy, teacher leaders can advocate for change without imposing demands. This means they can promote improvements while being seen as supportive rather than overbearing (Webber & Nickel, 2021). Teacher leaders demonstrate empathy and understanding toward their students, parents, and colleagues (Gulmez, 2022; Oppi et al., 2022; Webber & Nickel, 2021). This capacity allows them to voice concerns and seek solutions on behalf of others. A teacher leader in Zydzianaitė et al. (2021) explained that her capacity to listen for hours to students and others is what defines her capacity to become a teacher leader, as she can care for the concerns of her students.

Their ability to build bridges enables teacher leaders to negotiate and foster collaboration among various groups within the school environment (Landa & Donaldson, 2022). For instance, they can advocate for curricular changes that incorporate effective teaching methodologies to meet students' needs while simultaneously helping administrators fulfill accountability requirements (Meirink et al., 2019). Furthermore, teacher leaders have a deep understanding of the school context and cultivate positive relationships with principals and other administrative personnel (Pineda Baez et al., 2020; Stein, 2020). This unique position allows them to create genuine connections between parents, the community, and the school, effectively advocating for parental needs in a manner that aligns with the school's operational goals (Wiens et al., 2023).

**Teaching Excellence-** Teacher leaders play a pivotal role as skilled practitioners who effectively teach and connect with their students. While reflection on practice is a common exercise for all teachers (Webber & Nickel, 2021), those recognized as teacher leaders tend to demonstrate exceptional abilities linked to effective teaching (Akman, 2021). Key attributes such as strong classroom management and a deep understanding of student needs are core characteristics of these leaders (Harris & Jones, 2019). The study by Zydziunaite et al. (2021) highlights that one of the key competencies of teacher leaders is their capacity to enhance learning and knowledge acquisition. A teacher leader in the study elaborated that her capacity to listen for hours to students and others is what defines her capacity to become a teacher leader, as she cares for the concerns of her students. Additionally, a document analysis conducted by Webber and Nickel (2021) in Alberta, Canada, emphasized that leadership qualities are often found in professionals who excel in their teacher preparation programs and ongoing professional development. Teacher leaders create ample space and high expectations to design and implement curricula that are responsive to evolving standards, ensuring that all students receive the best possible education (Shen et al., 2020; Wang & Ho, 2019). This dedication to improvement and adaptability is what makes teacher leaders instrumental in fostering a thriving learning environment.

**Inspiring Role Models-** Teacher leaders unlock embody humanistic values and serve as vital communicators within educational settings. They are often distinguished by exceptional communication skills that enable them to connect deeply with their students. These educators genuinely care for their students' well-being and embody sincere empathy toward their circumstances, cultivating a strong and trusting rapport (Whitehead & Grenier, 2019). Research conducted by Fernández Espinosa and López González (2023) highlighted that a fundamental characteristic of effective teacher leaders is their capacity to forge connections with students through the expression of vulnerability. By sharing personal experiences of facing similar challenges, they create a sense of commonality, which can be immensely comforting and relatable to students.

Furthermore, the same researchers underscore the importance of providing sincere, supportive, and encouraging language as a fundamental aspect of their teaching approach. They found that participants in their study considered the ability to offer words of encouragement, especially during difficult moments, to be a defining trait of teacher leadership. This practice not only helps to uplift students but also revitalizes their motivation and enthusiasm for learning. Establishing positive and meaningful relationships with students is essential for effective teaching practices; it stands as one of the defining features of exemplary educators, as noted by Fernández Espinosa and López González (2023). This relational approach not only

enhances the learning experience but also fosters an environment where students feel valued and understood.

Additionally, research by Mao et al. (2020) reveals that teacher leaders wield considerable influence within their professional spheres. They inspire a modeling effect that students find compelling and strive to emulate in their own academic pursuits. This dynamic illustrates that the transformative power of teacher leaders extends beyond their immediate interactions, fostering a ripple effect that encourages colleagues and students alike to elevate their educational practices. The insights from Trigueros et al. (2020) further reinforce the notion that the inspiring effectiveness of teacher leaders plays a pivotal role in driving academic and pedagogical improvements within the broader educational community. By embodying these qualities, teacher leaders not only enhance their own teaching but also serve as catalysts for positive change in the learning landscape.

**Social Justice-** Teacher leaders are crucial in advocating for social justice and equity within educational environments. Recent literature highlights the importance of this advocacy aspect in teacher leadership (Mundorf, 2019; Oppi et al., 2022). Schools that foster an advocacy environment significantly enhance the impact of teacher leaders (Oppi et al., 2022). Mundorf (2019) presents various ways teacher leaders engage in advocacy. One effective method involves facilitating dialogues between parents of children with special needs, empowering them to advocate for their children's requirements. This role fits well with the teacher agency of leaders since they tend to listen, get to know their students (Stein, 2020), and create connections between schools and community members (Webber & Nickel, 2021). In Mundorf (2019), a teacher leader participating in the study successfully created an advocating group, including parents, for students with dyslexia. This endeavor supports families and fosters a shared understanding of educational needs.

Another approach taken by a teacher leader was to challenge heteronormative narratives that supported a hidden curriculum that stigmatized and undermined LGBTQ students. By developing a more inclusive curriculum, this teacher leader advocated for their students' needs (Mundorf, 2019). Teacher leaders can enrich the curriculum by developing and updating materials that reflect critical literacy and diverse perspectives. By including students in designing unit plans and questioning biases present in official curricula, teacher leaders empower students to take ownership of their learning. This collaborative approach not only enriches the educational experience but also inspires students to engage more deeply with the content (Mundorf, 2019; Oppi et al., 2022) since they can experience their input in the curriculum as a collective endeavor, a teamwork rather than a top-down imposed academic plan to follow. Promoting advocacy within teacher leadership benefits teachers and students and creates a more inclusive and equitable school environment, making everyone feel included and part of a collective effort.

**Professional Development-** Teacher leaders prioritize professional development as a fundamental trait that shapes their effectiveness. Their dedication to finding innovative approaches to enhance their teaching practices sets them apart in the educational landscape. Jiazhi and Batool (2024) highlight that a critical behavior of teacher leaders is their unwavering commitment to upholding the highest standards of excellence for themselves and their students. Similarly, Cheng (2022) emphasizes that the hallmark of true educational leaders lies in their relentless pursuit of improvement. This commitment often manifests with the existence of professional development opportunities that enrich their skills, foster collaboration among colleagues, and cultivate vibrant learning communities. Gul et al. (2020) explained that teacher leaders often relied on professional development to support

their endeavors. Specifically, in mentoring novice teachers, teacher leaders often found challenges that called for the availability of professional development.

Establishing professional development opportunities is essential to guarantee that teacher leaders remain informed and that their pedagogical strategies are exceptional. According to Meirink et al. (2019), enabling teacher leadership necessitates creating environments where novice teachers can flourish individually and collectively. Consequently, the capacity of teacher leaders to engage in continuous personal and collective growth is vital at every stage of their journey. Investing in this ongoing process is not just important, it's crucial as it can ensure lasting impacts on teaching and learning outcomes.

**Knowledge and Skills-** Teacher leaders are adept and reflective practitioners who understand the significance of their roles and responsibilities within the educational landscape (Chien, 2020). Their intrinsic motivation and passion drive their continuous professional development, allowing them to embody the core values and competencies essential for effective teaching (Fernández Espinosa & López González, 2023; Webber & Nickel, 2021). Research by Webber and Nickel (2021) highlights that successful teacher leaders not only excel in their teaching skills but also exemplify strong educational values.

The journey often begins with teachers honing their craft in the classroom, meeting students' diverse needs with effectiveness and empathy (Guyen et al., 2020). As they grow, these educators extend their influence by collaborating with fellow professionals, contributing to a culture of shared learning and continuous improvement. This iterative process helps teacher leaders align their practices with the goals and mission of their schools, ultimately benefiting student learning. Their belief in the transformative power of their actions fosters a culture of reflection where they continuously evaluate the rationale behind their pedagogical choices (Araşkal & Kılınc, 2019). A hallmark of effective teacher leaders is their unwavering commitment to fostering school development (Araşkal & Kılınc, 2019; Çagatay et al., 2021). This commitment, grounded in a clear understanding of how their decisions affect the academic environment, empowers them to make informed and impactful leadership choices (Oppi et al., 2023). In essence, teacher leaders undertake a lifelong journey of both personal and professional growth, consistently striving to implement best practices that lead to exceptional educational outcomes. Their dedication not only enhances their own skills but also significantly contributes to a thriving educational community.

**Compassion-** Teacher leaders embody compassion and exemplify empathy and acceptance, qualities that are crucial for fostering a supportive educational environment. According to Oppi et al. (2022), new teacher leaders prioritize their ability to understand and embrace others, highlighting a key aspect of effective leadership. This capacity aligns seamlessly with other essential characteristics of teacher leaders, such as advocating for students, collaborating with colleagues, and maintaining a commitment to excellence. The importance of collaboration in teacher leadership cannot be overstated. Oppi et al. (2022) emphasize that teacher leaders are attuned to the needs of students, fellow educators, and parents alike. By enhancing their own practices, teacher educators not only elevate their contributions but also enrich the shared values of the school community. This collaborative approach fosters a collective framework that is reflective, adaptive, and inclusive of diverse philosophies.

Additionally, the practice of sharing expertise is fundamental to teacher leadership. Creating a culture where knowledge exchange is encouraged requires recognizing and valuing the roles of all stakeholders in achieving common goals. Gul et al. (2019) found that mentoring novice teachers is a consistent practice among

effective teacher leaders. This mentorship not only allows established leaders to impart their knowledge but also enables them to continue their own professional development, demonstrating that leadership is a dynamic, reciprocal process. Encouraging an environment of mutual growth and support can significantly enhance the effectiveness of teacher leaders and ultimately benefit the entire educational community.

**Workspace improvement-** Teacher leaders are crucial in cultivating a vibrant and flourishing work environment within educational institutions. By prioritizing a positive and nurturing atmosphere, they create a space where both educators and students can thrive. Research indicates that effective teacher leadership hinges on fostering a collegial and collaborative workspace, as Chen (2022) emphasized. Such an environment is not just desirable, it's essential for modern schools. Teacher leaders actively promote collaboration by coordinating curricular meetings and encouraging participation in shared projects. Clearly articulating school goals ensures that every educator understands the collective direction and feels empowered to contribute meaningfully.

Furthermore, teacher leaders are not hesitant to seek out external expertise when needed, acknowledging that growth often involves insights from beyond their immediate surroundings. This proactive approach not only strengthens their role as liaisons among various stakeholders—such as teachers, parents, and community organizations—but also enhances communication and mutual understanding. Creating a thriving educational atmosphere requires more than just structural initiatives; it also demands a genuine commitment to building relationships. Granville-Chapman et al. (2024) argued that teacher leaders exemplify essential virtues like selflessness, humility, compassion, and understanding. These qualities are fundamental to fostering a culture of trust and respect. When interactions are grounded in these values teachers are more likely to feel supported, leading to better educational outcomes (Kılınç et al., 2021). Ultimately, teacher leaders are instrumental in transforming the educational landscape by nurturing collaborative and supportive environments. Their commitment to empowering educators and students is not only beneficial but essential. Investing in teacher leadership is critical to creating schools where everyone can flourish.

**Outreach and Connections-** Teacher leaders play a vital role in enhancing school outreach and fostering solid relationships with the community. Research by Shen et al. (2020) and Webber and Nickel (2021) highlights how teacher leaders effectively connect school practices with families and local institutions. These studies emphasize the importance of teacher leaders acting as liaisons, facilitating communication and collaboration between parents and school staff. Webber and Nickel (2021) identify a crucial expectation for teacher leaders: leveraging existing community resources to create valuable student opportunities. For example, students can gain hands-on experience through internships at local businesses, home-building companies, and other community organizations, which enriches their educational journey and prepares them for future careers.

Furthermore, Blank (2021) points out that a significant portion of teacher leadership activities focuses on community outreach and addressing community-related challenges. This focus on practical engagement demonstrates how teacher leaders are essential in bridging the gap between schools, community members, and local institutions. By embracing their leadership roles, teachers promote academic success and cultivate a more integrated educational experience that benefits students and the broader community.

Core dimensions of teacher leadership emphasize the professional, collaborative, and agential aspects of teacher leadership (Blank, 2021; Gulmez,



2022; Webber & Nickel, 2021). Key literature suggests that teacher leadership involves voluntarily taking the initiative to improve teaching practices and student outcomes. This agency can manifest in various ways, such as teachers redesigning curricula based on student needs or responding to top-down requests from administrators. Ultimately, the empowerment to act and make positive changes is central to the essence of teacher leadership, reflecting its dynamic nature in contemporary education (Chaaban & Sawalhi, 2021; Granville-Chapman et al., 2024; Hunzicker, 2019).

### The Enactment of Teacher Leaders

The second focus of this paper revolves around the critical necessity of identifying current practices that enhance teacher leadership. Among the studies reviewed, only a limited number specifically elucidate the pivotal role of teacher leaders within educational systems. This underscores an urgent need: not only is it essential to engage teacher leaders to retain existing educators, but their involvement is also crucial for the effective induction of new teachers into the profession. Strong teacher leadership acts as a significant catalyst for augmenting student learning outcomes and cultivating a supportive educational milieu.

Moreover, addressing the issue of teacher attrition is vital for fostering a more stable and motivated teaching workforce. It is imperative for teacher educators to seize opportunities for continuous innovation, ensuring they remain informed and adept in their pedagogical practices. By prioritizing the development of teacher leadership, we can substantially influence the future of education and enhance student success. The following paragraphs address specific practices contemporary research shows play an essential role in enacting teacher leadership.

**Trusting and Respecting Leaders-** The research conducted by Weatherhead (2024), Chen (2022), and Oppi et al. (2022) underscores the necessity of cultivating an empowering school environment that fosters trust among educators. For teacher leadership to flourish, it is crucial that teachers feel valued and supported by their peers. When teachers are trusted, they are more likely to engage in initiatives that enhance their leadership potential (Oppi et al., 2022). Moreover, as highlighted by Pineda Baez et al. (2020), trust empowers educators to pursue innovative practices freely, knowing they have the backing of their colleagues. Çagatay et al. (2021) further emphasize that trust is a vital component in promoting teacher leadership as it has a direct positive impact on instructional practices. This relationship is mediated by teachers' self-efficacy which plays a critical role in enhancing their beliefs about their capabilities in the classroom (Akman, 2021; Zainal & Matore, 2021).

Importantly, fostering a trusting atmosphere not only supports individual initiatives but also boosts collaborative behavior among teachers. When educators feel trusted, they are more inclined to collaborate, which is recognized as a significant indicator of effective teacher leadership (Çagatay et al., 2021). Building a culture of trust and appreciation within schools is pivotal for empowering teacher leaders. By prioritizing trust, educational institutions can enhance teachers' self-efficacy, encourage collaborative practices, and ultimately enrich the teaching and learning environment.

**Creating a Supportive Environment-** Fostering a supportive environment is essential for the effective enactment of teacher leadership. Research by Berg and Zoellick (2019) highlights that teacher leaders thrive when they receive recognition and reassurance from school stakeholders, particularly when their contributions are acknowledged through appropriate compensation and the opportunity to focus on their work. One practical approach to facilitating this is allowing teacher leaders to

dedicate time and space to collaborate with their peers, as suggested by Çagatay et al. (2021). Additional support could include providing teaching relief or arranging for substitutes as needed, which can significantly enhance their ability to lead effectively.

Moreover, recognizing the efforts of teacher leaders among their colleagues is crucial (Oppi et al., 2022). This recognition can extend beyond verbal acknowledgments to include tangible rewards such as professional credentials. For example, teacher leaders' significant work and passion in specialized areas can lead to degrees or certifications, further validating their expertise and contributions to the school community (Oppi et al., 2022).

Operationalizing Support- Cultivating a collaborative atmosphere where teachers and principals work together is a vital mindset that can significantly enhance the effectiveness of teacher leaders (Pineda Baez et al., 2020). However, support must be clearly operationalized to be successful. Berg and Zollick (2019) emphasized that principals and administrators play a crucial role in providing that support. Support can take many forms, including establishing trust, providing dedicated time, and offering stipends that empower teacher leaders to take initiative in meaningful projects.

The literature indicates that collaboration among teacher leaders is equally important. As noted by Berg and Zollick (2019) and Oppi et al. (2022), teacher leaders benefit greatly from working together, sharing experiences, and forming learning communities. Higher education institutions also have a valuable role in this support system. Universities can promote collaboration by involving teacher leaders in research projects, enhancing curriculum development, and offering professional development opportunities. By facilitating connections with other institutions, higher education can help teacher leaders access a wider array of resources and possibilities, further enriching their professional journey (Gningue et al., 2022; Berg & Zollick, 2019; Oppi et al., 2022). In essence, a supportive environment empowers teacher leaders, enhances collaboration, and promotes professional growth, ultimately benefiting the entire educational community.

Unlocking Archetypes of Teacher Leaders- Enacting teacher leadership does not need to be a process delayed until teachers are already in the school setting. Teacher preparation programs can tap into future educators' potential to become teacher leaders as soon as they start interacting in their classes. Weatherhead (2024) suggests that teacher educators may introduce several archetypes and concepts of teacher leaders; these archetypes are precisely some of the core characteristics of teacher leaders such as the collaborator, the innovator, the networker, etc. Teacher educators may, instead of lecturing the students, engage them in reflective conversations and guided discussions that lead them into the analysis and dimensions of these leadership archetypes and how they can be embodied.

Weatherhead (2024) suggests that these discussions and conversations can be grounded in real-life situations in academic settings that lead teacher candidates to examine how they identify themselves regarding their attributes to embody these archetypes. In doing so, teachers can identify areas for improvement. Another strategy to unlock teacher leaders' potential is to expose teacher candidates to a self-reflective process in which they raise self-awareness and eventually identify themselves and take ownership of their teacher leader roles. Hence, providing opportunities for self-discovery can be a decisive factor in enacting teacher leaders. Unlocking the innate potential of teachers is essential for fostering effective educational environments.

Fostering Shared Leadership for Collective Improvement- To enhance the enactment of teacher leadership, it is essential to promote an environment of shared leadership and collective improvement. Research highlights that support from principals and colleagues is vital in nurturing teacher leadership (Berg & Zoellick, 2019; Oppi et al., 2022; Pineda Baez et al., 2020; Weatherhead, 2024). A strong operational framework emerges from the attitudes of colleagues, emphasizing the importance of collaboration and co-creation in the school environment. For instance, implementing regular collaborative planning sessions can empower teacher leaders and their peers to engage in constructive discussions about strategies for school improvement (Pineda Baez et al., 2020). Such initiatives not only reinforce the meaningfulness of their roles but also counter feelings of isolation often felt by teachers confined to their classrooms. It is imperative that teachers perceive themselves as valued and trusted contributors to the collective betterment of the school community.

When principals and administrators rely solely on a hierarchical structure, it can significantly impede the development of teacher leadership. This restriction limits opportunities for collaboration and initiative-taking among teachers. Chen (2023) underscores that teacher leadership thrives when high-level expectations are cultivated within the school environment. Conversely, moderate, low, or non-existent expectations can stifle teachers' willingness to embrace leadership roles. Thus, establishing a shared vision of leadership where teacher leaders are trusted and actively participate in collective school development, is essential. By fostering a culture of high expectations and inclusivity, schools can effectively promote the enactment of teacher leadership, ultimately driving better outcomes for students and the educational community.

Including Opportunities for Teacher Leadership Enactment in School Culture- Creating an environment that fosters teacher leadership is essential for the growth and development of new educators. Successful enactment of teacher leadership hinges on trust, respect, and shared leadership (Baez et al., 2020; Oppi et al., 2022; Weatherhead, 2024). However, schools can take further proactive steps to cultivate this environment by intentionally designing opportunities for leadership enactment. One effective approach is to establish structured activities that specifically allow novice teachers to exercise their leadership capabilities. Meirink et al. (2020) emphasize that providing new teachers with avenues to improve routine teaching practices can significantly encourage their confidence and leadership skills. For instance, allocating dedicated time for collaboration on developing assignments, lesson plans, and tests not only nurtures a culture of support and innovation but also empowers new teachers to contribute their creative concepts and approaches.

Interdisciplinary projects present another valuable opportunity. Schools can encourage novice teachers to collaborate with more experienced colleagues on projects that span different subjects. Whether it's planning research initiatives or excursions, these collaborative efforts help build community and foster a sense of shared responsibility leading to innovative outcomes that benefit the entire school (Meirink et al., 2020). Additionally, schools should create channels for innovation by inviting new teachers to participate in selecting textbooks and exploring various teaching methodologies. According to Oppi et al. (2022), schools that value and actively pursue innovation create an encouraging atmosphere for teacher leadership. When new educators see that their insights are welcomed and that the school culture is receptive to change, they are more likely to engage actively in leadership roles. The deliberate design of opportunities within the school environment can significantly enhance the enactment of teacher leadership. By fostering collaboration

and encouraging innovation, schools can empower educators to thrive as leaders, ultimately enriching the educational experience for both teachers and students.

### Concluding Remarks

Teacher leadership remains an essential focus within the educational landscape (Meirink et al., 2020; Stein, 2020). By fostering key stances, skills, and values, teacher leaders play a transformative role in the educational process. They not only embody the core principles of education but also serve as role models for their peers and students (Nguyen et al., 2020). Possessing a profound understanding of their students' needs, teacher leaders commit to continuous professional growth and demonstrate proactive, effective teaching methods.

In nurturing a thriving school environment, teacher leaders leverage their expertise and influence to build an interconnected community that includes all education stakeholders, especially students. By promoting a culture of cooperation and collaboration (Kılınç et al., 2021; Landa & Donaldson, 2022), teacher leaders can address challenges and dismantle negative patterns. Their advocacy ensures that all students receive the highest quality of education, empowering them and positively impacting their educational settings (Blank, 2021). Through these efforts, teacher leaders make meaningful contributions to both their schools and the broader educational community.

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Review of Stem Education in Underserved Schools: Promoting Equity, Access, and Excellence, by Julia V. Clark, 2023.

Johns Hopkins University Press, Baltimore, 254 pages.

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This book is developed to bring a new version of our knowledge about what goes on in institutions of learning on an international scale. The book title is precise and mirrors the challenges schools encounter in relation to opportunities for STEM education in the US. The authors intend to address the achievement gap attributed to school efficiency from an international perspective involving teachers, policymakers, administrators, and government. They all play a central role in education reform to support the teaching and learning of all learners. The book also sheds light on solutions and advocates for equity, access, and excellence in STEM education for all students.

The overview discusses the dilemma in the United States regarding science, technology, engineering, and mathematics (STEM) education. The author's focus is on inequalities in access, participation, and success in STEM subjects among underrepresented and low socio-economic groups. Students of color and low socio-economic status face challenges, and a vast gap exists in opportunities for quality STEM education as compared to their white counterparts. More research has been done into these existing challenges, suggesting possible solutions and modeling a framework for STEM education reforms to promote STEM education for all students.

More insight is provided on the relevance of assessments in bringing change in STEM teaching and learning. The use of the K-12 science education Framework and Next Generation Science Standards (NGSS) in the development of STEM curriculum and student assessment provides equitable learning outcomes for all students. The barriers, such as the achievement gap in mathematics and science, are singled out between underrepresented groups of students. They are supported by data provided by the National Assessment of Educational Progress (NAEP).

Promoting equity and access in the 21st-century classroom composed of diverse learners is highlighted as the role of STEM. Emphasis is on designing new curricula, establishing relevant workplaces for teachers, students, administrators, and parents, and building leadership within teachers to maintain and extend STEM work in schools. The necessary considerations are demonstrated in the STEM Equity and Justice framework. This provides guidance on how teachers, curriculum designers, and teacher educators need to attend to the bright spots, hidden spots, and hot spots students show in STEM education and help them develop gathering spots in a classroom.

The challenges in STEM education in the United States include access to technology in schools, parental involvement in STEM education, and diversifying the teaching workforce. Possible solutions to this challenge include enhancing access to learning resources and providing students with equitable learning opportunities. The book powerfully demonstrates a systematic analysis of a benchmark in education policies and practices in Finland, Singapore, and Australia. These countries are ranked top in equitable STEM education programs and provide insight into STEM education reforms in the US. A summary of the equitable STEM education reforms formed through international cooperation and a creative approach to offer models of STEM education to US education reforms and policies. Relevant strategies and

recommendations for STEM education in the US for all students are featured. They are instrumental in higher STEM education policies as the institutions prepare culturally responsive teachers to serve in the 21st-century science classroom.

The authors do well in clearly defining and identifying the groups referred to by minorities and students of color: African Americans/ Black Americans, Latinos, and Native Americans. This book highlights the potential challenges students face: Students have little access to well-qualified STEM teachers, less access to strong STEM curricula and programs, inadequate resources and information, and minimal class opportunities. The disparity in STEM academic performance is shown by the standardized test scores between students of color and students from low socioeconomic status in comparison to their white counterparts. However, no evidence supports the idea that low socioeconomic status contributes to low academic achievement among students. The book analyzes and graphically presents data on various aspects of the problem to support the author's argument about STEM education in underserved schools in the US. For example, it offers analyzed data on the achievement gap in STEM education by NAEP. The authors also provide additional information from other studies used to identify the barriers to quality STEM education in the US.

Initiatives such as No Child Left Behind, The American COMPLETES Act, and Race to the Top have been highlighted to address the problems of equity, access, and excellence in STEM education and serve all students. However, the authors do not provide much insight into the effectiveness of the initiative as a matter of agency to solve the problem. In enhancing STEM equity and access in the 21st-century classroom, the authors offer qualitative and quantitative data from a study they conducted. The study is conducted to enable teachers to understand the impact of creative instruction such as inquiry-based approach. This has resulted in education reforms being established for international and global collaboration by the government, administrators, and other educational stakeholders to serve all students. In the book, additional resources and references are provided at the end of each chapter that are useful to the reader for further referencing.

The author mentions the unique involvement of all educational stakeholders, including parents, in solving the STEM education problem in minority groups and diversifying the teacher workforce. However, the parent's level of education is not considered; it is worth noting that parental education influences students' academic achievement (Theresya et al., 2018) and should be investigated. In overcoming barriers to STEM education, the book mentions parental involvement in guiding and motivating students to understand the relevance of STEM education despite their background. This aligns with Mohd et al. (2024), who provides counseling models and approaches to STEM education that address the complex challenges of underrepresented student groups.

Next-generation science standards (NGSS) also stood out; it is an essential tool for teachers, teacher educators, instructional designers, and policymakers. NGSS focuses on the learners using the "big idea of science" (disciplinary core ideas and cross-cutting concepts, as well as science and engineering practices) to make sense of real-life phenomena and solve problems. The use of NGSS in a classroom provides accessible and equally meaningful learning STEM opportunities for students from diverse backgrounds (Ngss, 2000).

The book strongly advocates for student involvement in both formal and informal education. Informal education involves parents and a diverse local science community whom students may emulate or see as role models in STEM career opportunities they are involved in. These outreach events are also interesting, expose students to different instructional approaches and diverse career



opportunities, and enhance the active participation of all students (Kaggwa et al., 2023).

Teacher preparation, professional development, and an adequate supply of resources are critical in the book. Emphasis is placed on teachers transitioning fully into the integration of NGSS in STEM to bring equity to education. However, executing the NGSS is a challenge for schools that do not have access to the necessary resources and teachers. Therefore, significant reforms are required in curriculum, instructions, assessment, professional development, teacher preparation, and in public and administration in providing support (Harris et al., 2017). The reforms have been underway, though the book does not mention how effective they have been in addressing the problem.

The book is readable, and the author uses logical English language with appropriate font size and spacing. It was not only written for educators of STEM but can be read by policymakers, curriculum designers, administrators, parents, and higher education students who are contributing to STEM education reforms for all students. The use of tables and graphs to present evidence of data to support the essays presented in the book is captivating to the readers, helping them make sense and foresee workable solutions.

The book spotlights the problem of equity and access to STEM education for students of color in the US. It also identifies the massive achievement gap in STEM education, potential barriers, and possible solutions. The book is not recommended for lower-level readers. Throughout the book, valuable insights into promoting equity, access, and excellence in STEM education for all students are provided.

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