

# NEW ENGLAND COLLEGE

## JOURNAL OF APPLIED EDUCATIONAL RESEARCH



An Open Source Journal from the  
Doctor of Education Program at  
New England College

*New England College Journal of Applied Educational Research (NECJAER)*

**98 Bridge Street Henniker, New Hampshire 03242**

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The *New England College Journal of Applied Educational Research (NECJAER)* is an open access journal that aims to give authors a platform to publish their ideas, work, and research for the benefit of educators and their students, PreK–Institutions of Higher Education. The purpose of this journal is to help educators advance the cause of making education equitable for all students.

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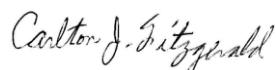
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## Message From the Editors

Charles Dickens wrote:

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of light, it was the season of darkness, it was the spring of hope, it was the winter of despair.

It seems that those words are true today. We have the potential to make the world great, but we also have the potential to make the world awful. In our journal, we hope to make the world better, safer, and more humane by offering our authors a space to share their ideas to improve our educational systems, which will help lead our institutions of education forward in positive and helpful ways. In this, our 5<sup>th</sup> edition [5(2)], our authors have chosen to share their ideas to help students, teachers, professors, deans, administrators, and program directors in different ways; for us to help each other make a positive difference in our institutions, and, thus, in the lives of our students. We believe we are at a point where educators can move the needle in a positive way. Educators have the opportunity to help young people choose goodness over evil, kindness over hatred, inclusion over exclusion, hope over fear, and cooperation over fighting. We are confident that our readers will find strength and encouragement from reading the articles in this edition of NECJAER. We hope our readers will be encouraged that what we do as educators makes a positive difference in our world. Thank you for helping to make our world a better place to be.



Carlton J. Fitzgerald, EdD



Gavin W. Henning, PhD

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## **Faculty as a Catalyst for Occupational Balance and Well-Being in OT Students**

Jamie Wronka, MS, OTR/L

New England College

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### **Abstract**

As the demand for occupational therapy (OT) practitioners continues to grow, the success and well-being of students in OT programs have become increasingly critical. While much attention is given to academic performance and curriculum design, the role of faculty-student relationships in shaping student outcomes is often overlooked. In my experiences as an OT educator, I have found that positive faculty-student relationships have served as a vital support system, particularly in high-stress programs where students are at risk for occupational imbalance, burnout, and mental health challenges. Drawing on both literature and personal experience as an occupational therapy educator, in this paper I explore how faculty engagement with students, a sense of belonging for students, and supportive learning environments might contribute to student persistence, academic success, and overall well-being. Understanding and strengthening these three elements may have important impacts on the preparation of occupational therapy students.

*Keywords:* occupational therapy education, faculty-student relationships, student well-being, faculty engagement, student persistence, occupational balance, sense of belonging, ecology of human performance

The importance of occupational therapy (OT) education is rising as the need for occupational therapists grows and the population of the United States ages (Bonder et. al., 2024).

Harvison (2022) reported declining occupational therapy student enrollment nationwide, while Medicare beneficiaries accessing occupational therapy services increased by 48% from 2009–2021. With increasing needs for occupational therapy practitioners coupled with diminishing student enrollment, there is urgency to identify how to maximize occupational therapy student success in college programs (Guzzardo et al., 2021).

Occupational therapy is designed on the premise that occupations are everyday activities people do individually and with other people that occupy time and bring meaning and purpose to life (American Occupational Therapy Association, 2020; World Federation of Occupational Therapists, 2012). According to the Health Resources and Services Administration (National Center for Health Workforce Analysis, n.d.), the demand for occupational therapists will increase by 22% between 2016 and 2030 under either a status quo service delivery model or an evolving healthcare delivery model. A status quo delivery model is when occupational therapy is delivered at the same rate and method to the population as it is currently. An evolving healthcare delivery model considers the possibility of changing locations and types of healthcare delivery, such as increasing telehealth or evolving methods of healthcare delivery over various settings (e.g., home, school, hospital, rehab, congregate living).

### **Occupational Balance and Student Well-Being**

As the demand for occupational therapists continues to rise (Bonder et. al., 2024), the academic success and well-being of students in OT programs become increasingly critical. One key aspect influencing student success is occupational balance, which affects mental health, academic performance, and overall well-being. According to Wagman et al. (2011), occupational balance can be defined as the individual's perception of having the right number of occupations and the right variation between occupations in order to maintain one's well-being (e.g., physical,

emotional, psychological, social). How people occupy their time as we all try to find the right balance of work, leisure, healthy living, social interactions, and psychological well-being determine how well we are in our day-to-day lives. Occupational therapists work with their clients in part helping them individually find the best balance for each person. I believe that occupational therapist educators should incorporate their expertise of occupational balance to help develop the positive teacher and student relationships necessary to help all students be successful.

People engage in occupations through the lens of their identities; a role is an aspect of identity influenced by the person's culture and context (American Occupational Therapy Association, 2020). Occupation categories include activities of daily living, instrumental activities of daily living (e.g., grocery shopping, money management), health management, rest and sleep, education, work, play, leisure, and social participation (American Occupational Therapy Association, 2020). Hooper and Wood (2019) noted that "in pursuing occupation, humans express the totality of their being, a mind-body-spirit union . . . humankind is, in essence, occupational by nature" (p. 46).

### **Critical Role of OT Faculty**

Given the background of occupational therapy and expertise of understanding humankind as occupational (Hooper and Wood, 2019), OT programs and faculty are uniquely positioned to best support and understand the occupation-based challenges their students face. Broom (2016) found that when students find their professors express care about their students and create engaging and meaningful lessons/experiences for students, then students are more engaged, successful, and their well-being is increased. Hoffman (2014) also found that when professors proactively develop positive relationships with their students, student engagement is enhanced.

Additionally, Guzzardo et al. (2021) found that students respond much more positively when they believe their professors care about their students. Gray et al. (2020) found that caring about students also means that professors take an interest in what their students do outside of class (e.g., clubs, sports, drama). All of the efforts that professors put into their students and their courses should be developed to help all OT students be successful in their courses and in life in general at school, and that is achieved through fostering a culture of belonging for all students (Tyminski et al., 2023; Walton et al., 2023).

When students move from their childhood home and K–12 education system into college, their roles shift from high school student to college student, and they take on new challenges to achieve occupational balance (Eklund et. al., 2017; Swanepoel & van Heerden, 2018). College students experience new challenges when needing to oversee their preparatory occupations such as managing their morning routine, packing lunch, sleep management, health management, and rest (Ocampo et al., 2024). Laposha and Smallfield (2022) identified that self-care, specifically exercise and sleep, is important for students' ability to recharge from daily demands in higher education. Students must choose their daily occupations in the new context of their college/university lives, with the goal of creating balance in their new environments (Gabon et al., 2023). Swanepoel and van Heerden (2018) described college students taking on new roles of friend, young adult, student, and campus resident. These complex new roles require students to devote resources to navigating their new lives while also engaging in college classroom environments with rigorous course material.

### **Academic and Non-Academic Challenges for OT Students**

While achieving occupational balance is essential for student well-being, many occupational therapy students struggle to maintain balance due to the rigorous academic

demands and personal challenges they face (Gadkari & Dulek, 2023; Grab et al., 2021). These challenges, both academic and non-academic, can significantly impact students' ability to succeed in their programs. Laposha and Smallfield's (2022) research detailed the high stress levels of students studying occupational therapy. More research is needed to identify techniques occupational therapy programs and occupational therapy faculty can employ to promote occupational balance, minimizing stress and maximizing student engagement and success. The growing need for occupational therapists coupled with the increased mental health challenges college students experience (Healthy Minds Network, 2024) highlight the importance for occupational therapy programs to mindfully approach student faculty relationships in and out of classrooms. Strayhorn (2022) described the challenges first-year minority students experienced: 54% worried about academic success, 31% felt homesick, and 23% experienced loneliness (pp. 48–49). Strayhorn (2022) further noted that unaddressed negative feelings can lead to lower motivation and increased risk for dropping out of college. Thus, I see the role for the OT educator to create similar positive relationships with every student as they do with their clients as a critical aspect of OT teaching.

Navigating higher education, students experience a tug-of-war between academics and leisure time, which decreases their sense of control over their days (Webber et al., 2022). As students try to prioritize academics, they delay or minimize their self-care activities, such as leisure, socializing, and sleep (Gabon et al., 2023). Swanepoel and van Heerden (2018) reported that students are often unable to engage in role exploration other than being students because of the heavy academic workload. Grab et al. (2021) identified that occupational therapy students experienced high levels of stress related to academic workload, financial strain, and time management challenges. When role exploration is limited to that of a college student, it

disadvantages each student's ability to find and achieve occupational balance (Swanepoel & van Heerden, 2018). Occupational therapy students described experiencing guilt when engaging in self-care, describing moderate stress and anxiety levels if they focused on tasks outside academic pursuits (Laposha & Smallfield, 2022; Webber et al., 2022). When students solely focus on their rigorous academics, their occupational balance, having the right amount and variety of activities in their day, suffers (Wagman et al, 2011).

Similar issues have been reported for students in other health science fields. Almost half of nursing students (43%) experienced higher levels of burnout compared to 23% of early education students (Cuevas-Caravaca et al., 2024, Discussion, para. 4). Cuevas-Caravaca et al. (2024) described how curricular structure, nature of professional practice, impaired coping strategies, and lack of social supports put nursing students at a disadvantage compared to early childhood education students regarding burnout prevention. When students experience burnout, their ability to engage in courses with vigor, dedication, and absorption decreases (Aker & Şahin, 2022; Grab et al., 2021; Morales-Rodriguez et al., 2019). However, engagement in self-care is significantly associated with reducing burnout (Morales-Rodriguez et al., 2019). Tapia et al. (2022) found that students who struggled to engage in their meaningful occupations and, therefore, did not recharge and achieve occupational balance, experienced higher levels of depression, anxiety, and stress. Ocampo et al. (2024) described students experiencing time compression or disinterest in occupations due to a perceived lack of time to devote to leisure occupations. Students decreased self-care activities to prioritize academics (Ocampo et al., 2024; Webber et al., 2022), which increased stress levels and impaired their ability to meaningfully engage in their academics (Morales-Rodriguez et al., 2019). Stroud et al. (2025) identified that OT students experienced high levels of stress and examined coping skills utilizing the Coping

Orientation to Problem Experienced Inventory (2025). Students coped most frequently using problem-focused coping, which Stroud et al. (2025) found did not contribute to student support systems overall. Problem-focused coping addressed only the direct problem students experienced through planning, positive reframing, informative support, and problem-solving during the stressful event (Schoenmakers et al., 2015). This process does not develop coping skills with broader purposes, thereby not reducing overall student stress.

Having established that occupational therapy students tended to over-emphasize their academics, which caused an increase in stress and a decrease in occupational balance, this combination manifested in a higher risk for needing mental health support (Young et al., 2023). Zajac et al. (2023) found that receiving mental health treatment correlated with higher rates of dropping out of college. To me, this correlation presents strangely. It does not seem sensible that receiving support leads students to higher dropout rates. However, Zajac et al.'s (2024) findings indicated that students who were struggling enough to seek help were more likely to drop out of college, not that receiving help was ineffective necessarily. I hypothesize that students were receiving help only after they became significantly overwhelmed. According to the Healthy Minds Network (2024) survey, 36% of students in higher education received counseling support over the preceding year (p. 10). Over a 4-week period, 77% of students surveyed reported that academic engagement was impaired at least 1 day due to mental health challenges (Healthy Minds Network Survey, 2024, p. 6). In the same study, authors also noted 45% of students described their mental health negatively impacting academic engagement for 3 or more days over a 4-week period (p. 6).

According to Eleftheriades et al. (2020), there is growing evidence to support those who believe contemporary college students arrive in higher education with a higher frequency of

acknowledged mental health needs, which negatively impact the academic careers of many students. Educators in all area of higher education should consider the evidence about the importance of positive professor and student relationships. It may be even more important in high stress programs, like OT, for professors to understand how to develop and maintain positive and strong relationships with our students.

### **Role of Sense of Belonging in Student Success**

Building upon foundational psychological theories, Maslow (1998) and Glasser (1999) each identified love and belonging as essential human needs that underpin motivation and well-being. Within Maslow's (1998) hierarchy, belonging occupies a central position, bridging basic psychological safety needs with higher-order goals of esteem and self-actualization. Similarly, Glasser's (1999) choice theory emphasized that the need for love and belonging drives human behavior and interpersonal connection. Extending these ideas into educational settings, Goodenow and Grady (1993) conceptualized school belonging as the degree to which students feel accepted, respected, supported, and included within their learning environments (p. 80). However, Allen (2025) observed gaps between the theoretical understanding of belonging and the lived experiences of students in educational institutions.

Strayhorn (2022) identified the value of sense of belonging for ethnic minority students as decreasing stress and increasing well-being, which fosters academic persistence. Tyminski et al. (2023) built on Strayhorn's work, identifying barriers and facilitators to belonging among occupational therapy, physical therapy, and medical education students. Faculty-student relationships including the negative effects of faculty bias and lack of mentorship emerged as one theme (Tyminski et al., 2023). Tyminski et al. (2023) emphasized the critical role of belonging and its impact on academic success, mental health, and professional development.

Khan et al. (2025) identified that emotional stressors diminished student sense of belonging, specifically identifying limited faculty support and engagement as a causative factor for emotional stress. Thus, adding more evidence to emphasize the need for OT educators to actively support our students.

Physical layout of a space, which impacted the ability of faculty and students to experience out-of-classroom interactions and social relationships, had the greatest impact on sense of belonging for both students and faculty (Khan et al., 2025). Strayhorn (2012) described physical layout as including physical layout, structural design, and accessibility where students “feel that these spaces are welcoming, affirming, and conducive to learning and interaction” (p. 19). Physical layout is critical to a sense of belonging for both students and faculty. According to Campos et al. (2021), teachers, educational leaders, sociologists, and psychologists have expressed how well-designed physical spaces acquire the power of fostering motivation in students for all educational activities. A sense of belonging is clearly associated with the physical spaces designed to help people gather and work together. A sense of belonging is negatively impacted when students experience that faculty members are inaccessible (Khan et al., 2025). The same is true when professors have minimal opportunities to interact with students outside of class. Espiritu et al. (2024) presented similar findings from a survey gathering data from 628 occupational therapy students, noting that students expressed that OT departments would better support students through more empathetic, supportive faculty, and more student feedback opportunities. Aker and Şahin (2022) found in their study of over 600 students that a stronger sense of belonging reduces burnout, which in turn supports academic performance.

Quality of life and sense of belonging may be linked to successful occupational balance. When students feel comfortable, welcome, and safe, they are able to interact more productively

with their high-stress academics (Khan et al., 2025; Strayhorn, 2022; Torkani et al., 2025; Tyminski et al., 2025). Torkani et al. (2025) utilized a short form health survey with 262 nursing students and identified that health-related quality of life decreases burnout among students. Health-related quality of life indirectly improved academic success through reducing burnout and improving intrinsic motivation for academic performance (Torkani et al., 2025). A key factor in fostering a sense of belonging is the quality of faculty-student relationships. Supportive faculty interactions can help students feel valued, engaged, and motivated, ultimately influencing their academic performance and well-being (Khan et al., 2025; Strayhorn, 2022; Torkani et al., 2025; Tyminski et al., 2025).

### **Strategies for Supporting Student Success**

Given the significant impact that faculty-student relationships and sense of belonging have on student success, I believe it is essential to explore concrete strategies that OT faculty and institutions can implement to enhance support for occupational therapy students. These strategies aim to address both academic and well-being challenges, ensuring students are better equipped to navigate their educational journey. Tapia et al. (2022) found that increasing students' occupational engagement opportunities helped protect against adverse mental health outcomes. Black et al. (2019) described occupational engagement as a multidimensional interaction of the body, mind, and spirit, acknowledging the connections between physical health, mental health, and spiritual health. Occupational therapy programs have the opportunity to improve student success through supporting student occupational engagement on campus.

Morales-Rodriguez et al. (2019) found that self-care engagement supported student academic engagement; self-care includes time with friends and other leisure activities (Gabon et al., 2023; Webber et al., 2022). The resilience of students improved with greater breadth and

diversity of friend groups (Fernandez-Martinez et al., 2017), indicating that socializing outside of program-based friend groups, or peers who are also studying in the same program, supports student success. Finding time to socialize outside of OT department connections indicates positive occupational balance, whereas students who are unable to focus energy away from academics lack that occupational balance. The difficulty of adjusting to the academic environment is eased when students experience social support and a sense of belonging among their peers (Swanepoel & van Heerden, 2018). Walton et al. (2023) performed a randomized controlled trial with nearly 27,000 participants piloting a social-belonging intervention for first-year students. The researchers recommended that prioritizing pedagogy that affirms students, identifies their strengths, and promotes a growth mindset would promote social belonging and progress for students. Walton et al. (2023) hypothesized that if all 749 institutions from the study utilized a 10–30 minute online belonging module with incoming students, that an additional 12,000 students would complete their first year (Generalizability, para. 1).

Strayhorn (2022) identified that students feeling more connected to their school community and confident in utilizing campus resources are protective factors. Feeling connected to or belonging is important for students at institutions of higher education. According to Strayhorn, when students feel like they belong, they do better personally, academically, and socially. When students perceive that faculty and other students care and offer social support on campus, students' feelings of connectedness increase, they experience feeling cared about. Strayhorn also explained that when students feel accepted, respected, and valued as an important part of the community, those students become empowered to work hard and be successful in their education.

Occupational therapy professors play key roles in helping OT students feel like they belong to and are an important part of the higher education community. As experts in occupational balance, OT educators can develop their in- and out-of-class experiences for students to assist all OT students in pursuing occupational balance. Through leading by example, professors can develop positive classroom cultures where every student is treated with respect, demonstrating that every student is important. Second, OT professors can utilize classroom expectations where every student is expected to be helpful and respectful to each other. These skills will be vital in the students' professional lives as clinicians following their studies. OT professors should build their curriculum to promote occupational balance within their OT classes. Third, OT professors should develop a mindset that each student is intelligent and will be successful. Then, professors need to assess each student's capabilities and determine where each student may need assistance. Following up with students to engage them in the learning process to gain knowledge and skills needed to move forward is vital to developing each student's success trajectory. Encouraging students to work together in peer study groups to provide and receive feedback is another valuable practice that prepares students for their clinical future. Developing the ability to provide feedback that is useful, positive, meaningful, and constructive in ways that promote the feeling that teachers and peers are supporting their progress builds community among peers and clinical skills for the future. Finally, OT educators should support students through interactions outside of class. Student OT Associations (SOTA) are valuable places where students can engage with their peers, perform service projects, and receive support from faculty members. SOTA organizations also provide opportunities for socialization, leisure pursuits (promoting occupational balance), and peer-to-peer support.

### **Faculty Role in Supporting Occupational Therapy Students**

Determining the role of faculty in occupational therapy student success is beneficial to occupational therapy programs because it is an OT variable over which faculty have control. Miller and Mills (2019) described faculty caring as being apparent to students when a faculty member demonstrates empathy, relatability, approachability, and encouraging enthusiasm in the classroom. Hoffman (2014) found that proactive faculty investment in student relationships, when faculty demonstrate interest and investment in their relationships with students, promoted engagement in the course. Faculty who demonstrated care and concern for students developed a culture of trust in their classrooms. Broom's (2016) findings aligned with the importance of faculty-student relationships. Broom measured rapport between faculty and students, identifying two important factors: "professor cares about students" and "professor creates engaging and constructive atmosphere." Caring about students is an investment in student success, well-being, and demonstrating a willingness to connect (Broom, 2016). Students described evidence of a faculty caring for them when faculty acknowledged students' lives outside of academics and the classroom (Miller & Mills, 2019). Caring as a teacher is expressed through effective teaching, and Miller and Mills (2019) identified adaptive teaching, adjusting, and asking for feedback as a priority for student success.

Grab et al. (2021) identified via a survey with 799 respondents that faculty did not recognize the severity of student stress or the negative impacts on student occupational balance. Gadkari and Dulek (2023) examined faculty perceptions of student resistance to learning behaviors. Similar to Khan et al. (2025) and Grab et al. (2021), Gadkari and Dulek (2023) found that faculty lacked awareness of student stress levels. Faculty assumed a lack of motivation from students when students were struggling with stress, anxiety, and systemic pressures. Outside the

classroom, faculty support student success by building the faculty-student relationship while maintaining responsibility for boundaries in all interactions because of the power dynamics involved (Marmet, 2023). Marmet (2023) found that faculty building high-quality relationships with students yielded improved student outcomes when compared to student performance without relationship-building efforts. Creating an engaging and constructive classroom atmosphere encouraged student engagement, particularly when the classroom structure was designed to support student participation (Broom, 2016).

Guzzardo et al., (2021) described four themes that support student-faculty relationship building in class: (a) creating pedagogical space that is flexible to students' unique needs, (b) being inclusive by demonstrating that students belong in class and faculty value their presence and believe in their success, (c) engaging with students to push them to grow with support, and (d) doing more than teaching. Other authors found that personalized feedback, flexibility, and targeting student learning needs in teaching were identified as valuable themes to promote academic success and student belonging (Espiritu et al., 2024; Khan et al., 2025; Kubiak et al., 2025). Faculty actions that support positive student-faculty relationships include listening, being invested in student well-being and achievement, responding to implicit and explicit emotional needs, being available for office hours or questions outside of classroom time, and asking for feedback from students (Guzzardo et al., 2021; Hoffman, 2014; Miller & Mills, 2019; Wang et al., 2023). Positive student-faculty relationships led to better learning, achievement, and subjective well-being (Guzzardo et al., 2021).

Relationship building to support student success also manifests outside of the classroom. Gray et al. (2020) found that socializing with peers and role models, who could be professors or professionals in the community, supported professional identity in occupational therapy students.

Wang et al. (2023) identified that student resilience was supported by stress management, problem-solving, and engagement in self-care. Greater resilience and comfort in the classroom promoted students to grow their abilities to establish strong relationships with patients in occupational therapy fieldwork placements (Wang et al., 2023), an important piece of occupational therapy degree programs, often the final step of graduate school before pursuing occupational therapy licensure.

### **Implications for Providing Support in OT Education**

In the context of occupational therapy education, the ecology of human performance model (EHP) (Dunn et al., 1994) helps explain how student success is shaped not just by personal abilities, but also by the environmental factors such as faculty support, peer relationships, and academic workload (Khan et al., 2025). Dunn et al. (1994) developed the ecology of human performance model to emphasize the interaction between a person and their environment to understand human performance. The EHP model asserts that physical and social contexts are central to how people engage in tasks (Dunn et al., 1994). Khan et al. (2025) utilized focus group discussions and interviews based on the ecology of human performance framework to identify barriers and facilitators to a sense of belonging for OT students and faculty. Physical layout and social relationships had the greatest impact on sense of belonging for students and faculty (Khan et al., 2025). Developing awareness of classroom layouts, office arrangements, and open-door policies for OT faculty could support improved sense of belonging for students and faculty.

Providing intentional support in occupational therapy education has far-reaching implications beyond individual student outcomes. When faculty and programs adopt strategies that enhance belonging, promote occupational balance, and reduce stress, they contribute to the

development of more resilient, engaged, and prepared practitioners. This, in turn, strengthens the occupational therapy workforce and improves service delivery to diverse client populations by supporting more prepared new graduates. By integrating supportive practices—such as mentorship, flexible pedagogical approaches, and inclusive physical and social learning environments—programs not only address student well-being, but also help close equity gaps that disproportionately affect students from underrepresented backgrounds (Banks, 2022; Khan et al., 2025). These efforts align with the profession’s broader goals of advancing diversity, equity, and inclusion, ensuring that future occupational therapists are equipped to meet the complex needs of the communities they serve.

Given the expected increased need for occupational therapists and increased utilization of occupational therapy (Harvison, 2022), identifying techniques to support occupational therapy student success while studying is beneficial to individual occupational therapy programs, the profession of occupational therapy, and the healthcare system in the United States as a whole. Occupational therapy students’ success is not only built upon academic performance prior to college admission, but also academic success in college occupational therapy and foundational courses (Brzuz et al., 2024). Academic success that supports student preparation for their certification exam is achieved through fostering a culture of belonging for all students (Tyminski et al., 2023; Walton et al., 2023).

### **Conclusion**

In conclusion, the success of occupational therapy students is deeply influenced by the quality of faculty-student relationships, which serves as a critical buffer against the high levels of stress and occupational imbalance commonly experienced in rigorous academic programs. As the demand for occupational therapists continues to rise alongside declining student enrollment and

the demographic cliff, it is imperative that OT programs take proactive steps to support student well-being and persistence (Brzuz et al., 2024; Tyminski et al., 2023; Walton et al., 2023). Faculty members play a pivotal role in shaping the learning environment by fostering a sense of belonging, demonstrating empathy, offering personalized feedback, and creating inclusive, flexible learning spaces. Grounded in the EHP Model (Dunn et al., 1994), this approach highlights the importance of the interaction between person and environment in supporting student engagement and resilience. By intentionally cultivating positive faculty-student relationships and addressing both academic and non-academic challenges, occupational therapy programs can enhance student outcomes, reduce burnout, and contribute meaningfully to the development of a diverse and well-prepared healthcare workforce.

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**The Impact of Working Memory and Second Language Proficiency Level on Second  
Language Writing**

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**Abstract**

The present study, which constitutes part of a wider research study, aimed to investigate whether working memory capacity and second language proficiency level affect the quality of second language writing produced by teenagers. To that end, narrative texts were solicited from 30 Greek second-year junior high school students, produced in English, being their second language. The texts were assessed in terms of fluency and accuracy, according to *Curriculum Based Measurement for Writing (CBM-W)* criteria. Students' working memory capacity was assessed with the application of relevant tests, based on Pickering and Gathercole's (2001) Working Memory Test Battery for Children (WMTB-C). A standardized test, which focused on grammar and vocabulary use, was implemented for the assessment of students' second language proficiency level. The statistical analysis of quantitative data collected revealed no statistically significant correlation between working memory capacity and the quality of the second language texts. Students' second language proficiency level, however, was found to be statistically significant for the quality of narrative texts generated by teenagers. The findings are discussed in relation to previously conducted research.

*Keywords:* working memory, second language proficiency level, second language writing

Writing constitutes a cognitively demanding process, as it entails the coordination of several linguistic and cognitive processes. It is far more challenging when carried out in a second language in which the writer has not yet acquired the relevant second language knowledge and lacks second language linguistic resources (Weigle, 2005). Composing written texts in a non-native language requires an array of writing skills along with cognitive resources of the new language. Several scholars (Bereiter & Scardamalia, 1987; Berninger et al., 1996; Flower & Hayes 1981; Hayes, 1996, 2012) have attempted to shed light on the complex and multidimensional nature of writing.

Hayes and Flower (1981), following the development of cognitive psychology in the decade of the '70s, proposed a pioneering, for that time, model of process writing. They described the various subprocesses a writer goes through when composing a text. Writing was approached as a procedure of non-linear, recursive phases. The original model was revised twice by Hayes (1996, 2012). Writing was studied within a communicative context, which involved various parameters among which were the writer's goals, motives and predisposition, the audience, the pre-existing relevance to the topic knowledge which was stored in the writer's long-term memory, etc. Hayes (1996, 2012) also acknowledged working memory's contribution to writing. In their first revision of the original model, they attributed a central role to working memory, by placing it in the center of the new framework of the writing process. Working memory supports the execution of the various cognitive and linguistic sub-processes that take place, when composing a written text (Hayes, 1996, 2012; Kellogg, 1996).

Working memory, as proposed by Baddeley and Hitch (1974), is a multi-component memory system. It is responsible for the short-term storage and processing of information. Working memory's function is essential for language acquisition and the development of linguistic skills. The original working memory model consisted of three components, the phonological loop, the visuospatial sketchpad, and the central executive. In 2000, Baddeley revised the model and added a fourth component, the episodic buffer.

Working memory is a memory system that functions as an interface node between short-term and long-term memory (Baddeley, 1996, 2003). The information that enters the system remains in the phonological loop for short-term retention and processing. The phonological encoding of the information remains active in the specific sub-component, so as to be processed. This is accomplished through the articulatory rehearsal that takes place in the phonological loop. The other function that is performed in the same sub-component is the phonological retention. The non-verbal information (e.g., images, shapes) is phonologically encoded before entering the phonological loop. Information may come from some external source or be retrieved from long-term memory.

The visuospatial sketchpad is responsible for the short-term retention and processing of visual information and information that relates to movement and dimensions. Several scholars distinguish two parts of this particular subsystem of working memory, the visual and the spatial (Deyzac et al., 2006; Logie, 1995, as cited in Baddeley, 2003; Smith & Jonides, 1997). The visual element is responsible for the short-term retention of static visual information, such as images, while the spatial component is responsible for the short-term retention of information that relates to space, motion, and dimensions.

The central executive plays a supervisory role in the working memory system. It acts as the central processor, responsible for coordinating the functions of the subsidiary systems. It is also responsible for the performance of several cognitive functions and the management of attention (Baddeley, 1996, 2006). The central executive allocates cognitive resources for the execution of cognitive processes, contributes to the selection and application of appropriate strategies and the achievement of individual goals, and supports the performance of higher order language tasks.

The episodic buffer, which was added by Baddeley in 2000, facilitates the creation of single mnemonic episodes or representations by integrating information, which may come from the phonological loop, the visuospatial sketchpad, or long-term memory. Its function supports the central executive, which is responsible for the performance of several cognitive tasks (Baddeley & Wilson, 2002). It is also responsible for the processing of abstract concepts. The function of the episodic buffer is particularly important in learning, as it helps to process and integrate new information, so as to create new mnemonic representations and cognitive schemata.

### **Literature Review**

Research has revealed working memory's contribution to second language acquisition. Working memory has been found to support vocabulary learning (Cheung, 1996; Efstathiadi, 2016; Gui & Ismail, 2024; Kormos & Sáfár, 2008; Martin & Ellis, 2012; Masoura & Gathercole, 1999; 2005; Nawaz et al., 2024; Teng, 2022, 2024), oral comprehension (Joh & Plakans, 2017; Masrai, 2019; Satori, 2021), oral production (Ahmadian, 2012; Awwad & Tavakoli, 2022; Gilabert & Munoz, 2010), written comprehension (Escobar & Espinoza, 2024; Liu et al., 2024; Shahnazari, 2023), correct use of grammar, syntax, and pronunciation (Ellis, 1996; Ellis &

Sinclair, 1996; O'Brien et al., 2006; Serafini & Sanz, 2016), and the improvement of second language proficiency level (Mackey & Sachs, 2012; Wright, 2009).

Acknowledging the central role that has been attributed to working memory in the first language writing process (Hayes, 1996, 2012; Kellogg, 1996), scholars attempted to investigate working memory's role in second language writing. However, as many scholars (Mallahi, 2019; Michel et al., 2019; Mujtaba et al., 2021; Peng et al., 2022; Wen & Li, 2019) have noted, research on working memory's contribution to second language writing production is still limited. It is also worth mentioning that most of the studies that have been carried out in this field focus on writing by adults (Mujtaba et al., 2021; Teng & Zhang, 2024; Yi & Ni, 2015; Zalbidea, 2017). Research involving adolescent students' writing is even more limited (Abu-Rabia, 2003; Kormos & Sáfár, 2008; Michel et al., 2019).

Research has displayed variation in relation to the parameters studied and the methods implemented. This paper focuses on working memory, second language proficiency level, and second language writing quality, assessed in terms of fluency and accuracy. Working memory has been found to exert a positive effect on second language writing performance (Abu-Rabia, 2003; Peng et al., 2022). Teng and Zhang's study (2024) revealed working memory's predictive impact on second language writing performance. These researchers also found a statistically positive correlation between the participants' second language proficiency level and their second language writing performance ( $r = .456, p < .01$ ). Another research study, conducted by Vasylets and Marin (2021), revealed working memory's statistically positive correlation with second language writing accuracy produced by participants with a low second language proficiency level ( $r = -.28, p < .05$ ). They also found a positive effect of working memory on lexical sophistication ( $t = 3.29, p < .01$ ) but no link between working memory and fluency.

Individual differences in working memory capacity were found to relate to second language writing performance. Bergsleithner (2010) concluded that writers with higher working memory capacity tend to produce second language texts with fewer errors. The positive effect of working memory's capacity on second language writing accuracy is supported by some other studies (Mallahi, 2019; Mujtaba et al., 2021; Zalbidea, 2017). A statistically significant correlation was detected between learners' working memory capacity and the writing accuracy achieved in their second language texts. Moreover, Mavrou (2020) concluded that individual differences in some executive functions of working memory may predict linguistic accuracy in second language writing. Although Michel et al. (2019) did not find a statistically significant effect of working memory functioning on second language writing, they detected a positive but not statistically significant correlation with the writers' editing performance, which relates to accuracy. They also found that writers with high working memory capacity had a more consistent performance across a variety of tasks of different modality in comparison to those with low working memory capacity. However, some studies revealed no statistically significant correlation between working memory functioning and second language writing accuracy (Yi & Luo, 2013; Yi & Ni, 2015; Zabihi, 2018).

Working memory capacity has played a significant role in some cases for second language writing fluency (Mallahi, 2019). Writers' ability to assess and process information, employ linguistic and cognitive functions, and apply strategies in order to compose written texts is associated with working memory functioning. Mallahi (2019) found that individual differences in working memory associated with writers' ability to achieve a better performance in terms of fluency. This conclusion complies with the findings of other studies (Yi & Luo, 2013; Yi & Ni, 2015), in which it was revealed that working memory exerts a significant effect on writing

fluency. Moreover, Zabihi (2018) found that verbal working memory may function as a predictor of second language writing fluency. An indirect impact on fluency was also detected by Grace Kim (2021). They found that working memory had a positive effect on linguistic resources, which could predict greater fluency.

Finally, Lu (2010) found that working memory had little impact on second language writing and could not predict writing performance. Second language proficiency level, instead, was found to be a significant predictor of second language writing performance. In a similar study (Manchón et al., 2023) results revealed no correlation between working memory and writing, but showed that second language proficiency level correlated significantly with writing fluency and accuracy.

## **Methodology**

### **Participants**

The sample consisted of 30 second-year junior high school students. Eighteen students were girls (60%) and 12 were boys (40%). The participants did not all attend the same school, but two different ones. They were all native speakers of Greek, who had been studying English as a second language since the first grade of primary school. They all had also attended English classes in the private sector. None of students exhibited any special educational needs. Since there were no students with special education needs in this participation pool, the group of participants was an atypical class compared to most public-school classes around the world.

### **Procedure**

The administration of standardized tests delivered the data required for the assessment of working memory capacity and second language proficiency level. The tests were administered in groups, on two different school days. On the first day the participants completed the tests for the

assessment of the phonological loop and second language proficiency level. On the second day they completed a test for the assessment of the central executive and also composed a narrative text in the second language. The whole procedure was scheduled and carried out according to the *Guidelines for the Approval of Educational Programs and Research* (2021) issued by the Ministry of Education and Religious Affairs of Greece. The IBM SPSS Statistics 28 software was used for the statistical analysis of the data.

## **Tools**

### ***Working Memory***

The assessment of working memory capacity was administered through the assessment of two sub-components of working memory, the phonological loop and central executive. The tasks for the assessment of both sub-components were based on the Working Memory Test Battery for Children (Pickering & Gathercole, 2001). The tasks used were a translation of the English version with necessary adaptations, where necessary, into Greek (Chrysochoou, 2006).

A serial recall memory task was used for the assessment of the phonological loop capacity. The participants listened to sets of two-syllable words and had to remember and write them down in the same order they had heard them. The task was composed of six blocks of sets of words. The number of words the sets contained increased from block to block, so as to increase the cognitive load applied on the phonological loop for the completion of the task.

A listening recall task was used for the assessment of the central executive capacity. The task required both short-term storage and processing of aural information. In particular, the participants listened to sets of short, simply structured sentences and had to judge their veracity and remember the last word of each sentence. Students were asked to write down the information required. The last words of the sentences should have been written in the same order they were

heard. The participants were presented with five different blocks of sets of sentences. The number of sentences in each block increased from block to block, raising the cognitive load applied on central executive.

### ***Second Language Proficiency Level***

A standardized test was used for the assessment of the participants' second language proficiency level. It was a multiple choice, cloze test, which focused on grammar and vocabulary use assessment. It consisted of part of the English Speaking Board (ESB) official assessment exams. The specific standardized exams provided officially acknowledged certificates of the assessment of the English language proficiency level in Greece.

### ***Writing***

Participants were asked to compose a written narrative text. The specific genre was selected as more relevant to them, since they are familiar with both of its forms (oral and written) from an early age. As such, they were expected to be well motivated to complete the activity assigned and achieve a good performance. Following the Curriculum Based Measurement for Writing (CBM-W) (Cusumano, 2007; Deno, 2003; McMaster et al., 2011) students were provided with a prompt sentence. They were informed that they could think for one minute and then they would have 6 minutes to write their narrative.

The texts were assessed in terms of fluency and accuracy according to CBM-W (Cusumano, 2007; Deno, 2003; McMaster et al., 2011) guidelines. The total of written words produced constituted the fluency rating. Accuracy was studied in relation to the amount of the Correct Word Sequences (CWS) and the Incorrect Word Sequences (INCWS) identified in the texts. A correct word sequence is defined as two adjacent words that are acceptable within the context of a phrase to a native speaker of a language (Videen et al., 1982). Certain criteria were

followed for the assessment of word sequences as correct or incorrect. The criteria were related to correct punctuation, syntax, grammar, spelling, semantics, and vocabulary use.

### Findings and Discussion

The present study aimed to investigate the potential impact of working memory capacity and second language proficiency level on second language writing quality. Writing was assessed in terms of fluency and accuracy. The data collected were statistically analyzed with the use of *IBM SPSS Statistics 28* software.

Pearson correlation analysis was applied to study the relation of the variables phonological loop (PL), central executive (CE), second language (L2) proficiency level, and second language (L2) writing fluency. The analysis revealed statistically significant correlation ( $r = .777, p = .001$ ) only between the variables second language proficiency level and second language writing fluency, as shown in Table 1.

**Table 1**

*Pearson Correlations Among Phonological Loop, Central Executive, Second Language Proficiency Level and Second Language Writing Fluency*

Variables	PL	CE	L2 proficiency level	L2 Writing fluency
PL	–	.357	.127	.102
CE	.357	–	.202	.268
L2 proficiency level	.127	.202	–	.777*

Note: \* $p < .01$

Pearson correlation analysis was also applied for the study of the relation among the variables phonological loop (PL), central executive (CE), second language (L2) proficiency

level, correct word sequences (CWS), and incorrect word sequences (INCWS). The analysis revealed statistically significant correlation ( $r = .754, p = .001$ ) only between the variables second language proficiency level and correct word sequences, as shown in Table 2.

**Table 2**

*Pearson Correlations Among Phonological Loop, Central Executive, Second Language Proficiency Level, Correct Word Sequences, and Incorrect Word Sequences*

Variables	PL	CE	L2 proficiency level	L2 CWS	L2 INCWS
PL	–	.357	.127	.179	-.071
CE	.357	–	.202	.296	-.069
L2 proficiency level	.127	.202	–	.754*	.104
L2 CWS	.179	.296	.754*	–	-.109
L2 INCWS	-.071	.296	.104	-.109	–

*Note:* \* $p < .01$

After the Pearson correlation analysis, a hierarchical linear multiple regression analysis was used aiming at achieving a thorough study of the relationships among the variables involved and producing appropriate explanatory models to describe these relationships. In the first regression analysis writing fluency was used as the dependent variable. The phonological loop, the central executive, and the second language proficiency level were added in the regression as independent variables. The models produced are presented in Table 3.

**Table 3***Hierarchical Linear Multiple Regression Analysis*

Dependent variable: L2 fluency			
	Model 1	Model 2	Model 3
Constant	63.465 (14.323)	45.568 (19.450)	-14.820 (16.155)
PL	.703 (1.293)	.50 (1.365)	-.275 (.894)
CE	–	3.005 (2.246)	1.469 (1.490)
L2 proficiency level	–	–	5.532* (.907)
Observations	30	30	30
$R^2$	.010	.072	.618
Adjusted $R^2$	-.025	.003	.574
Residual Std. Error	28.286	27.895	18.232
$F$ Statistic	0.296 ( $df=1,28$ )	1.047 ( $df=2,27$ )	14.036* ( $df=3,26$ )

Note: \* $p < .001$

The regression analysis revealed a statistically non-significant contribution of the phonological loop in explaining the variance of the dependent variable. The first model, resulting from the regression analysis, was statistically non-significant ( $F_{1,28} = .296, p = .591$ ). The addition of the second predictor, the central executive, contributed an additional 6.2% to the total variance of the dependent variable, but its contribution was statistically non-significant ( $\Delta R^2 = .062, p = .192$ ). The model explained 7.2% of the total variance of the second language fluency. The model was statistically non-significant ( $R^2 = .072, F_{2,27} = 1.047, p = .365$ ). The third model, resulting from the addition of the variable second language proficiency level, was statistically

significant and explained 61.8% of the variance of the dependent variable, second language writing fluency, ( $R^2 = .618$ ,  $F_{3,26} = 14.036$ ,  $p < .001$ ). The third variable contributed by 54.6% to the explanation of the variance of the dependent variable. Its contribution was statistically significant ( $\Delta R^2 = .546$ ,  $p < .001$ ).

In the second regression analysis the variable, correct word sequences, was used as the dependent variable. The phonological loop, the central executive, and the second language proficiency level were added in the regression as independent variables. The models produced are presented in Table 4.

**Table 4***Hierarchical Linear Multiple Regression Analysis*

Dependent variable: Correct word sequences			
	Model 1	Model 2	Model 3
Constant	45.878 (15.179)	26.651 (20.598)	-35.115 (17.860)
PL	1.318 (1.370)	.617 (1.446)	.284 (.991)
CE	–	3.229 (2.378)	1.658 (1.651)
L2 proficiency level	–	–	5.658* (1.005)
Observations	30	30	30
$R^2$	.032	.094	0.592
Adjusted $R^2$	-.003	.027	.544
Residual Std. Error	29.977	29.536	20.207
$F$ Statistic	0.926 ( $df=1,28$ )	1.398 ( $df=2,27$ )	12.554* ( $df=3,26$ )

Note: \* $p < .001$

The regression analysis revealed a statistically non-significant contribution of the phonological loop in explaining the variance of the dependent variable, correct word sequences. The phonological loop explained 3.2% of the variance of the dependent variable. The first model was statistically non-significant ( $R^2 = .032$ ,  $F_{1,28} = .926$ ,  $p = .344$ ). The second predictor, the central executive, contributed 6.2% to the explanation of the variance of the dependent variable. Its contribution was statistically non-significant ( $\Delta R^2 = .062$ ,  $F_{1,27} = 1.843$ ,  $p = .186$ ). The second model, resulting from the addition of the central executive, explained 9.4% of the variance of the dependent variable and was overall statistically non-significant ( $R^2 = .094$ ,  $F_{2,27} = 1.398$ ,  $p = .264$ ). The contribution of the third predictor, the variable second language proficiency level, was statistically significant. The third independent variable contributed 49.8% to the explanation of the total variance of the variable correct word sequences ( $\Delta R^2 = .498$ ,  $F_{1,26} = 31.687$ ,  $p = .001$ ). The third model was statistically significant. It explained 59.2% of the variance of the dependent variable ( $R^2 = .592$ ,  $F_{3,26} = 12.554$ ,  $p < .001$ ).

Finally, in the third regression analysis the variable incorrect word sequences was used as the dependent variable. The phonological loop, the central executive and the second language proficiency level were added in the regression as independent variables. The models produced are presented in table 5.

**Table 5***Hierarchical Linear Multiple Regression Analysis*

Dependent variable: Incorrect word sequences			
	Model 1	Model 2	Model 3
Constant	19.548 (5.707)	20.897 (7.996)	16.872 (10.247)
PL	-.195 (.515)	-.146 (.561)	-.167 (.568)
CE	–	-.226 (.923)	-.329 (.947)
L2 proficiency level	–	–	.369 (.577)
Observations	30	30	30
$R^2$	.05	.007	.023
Adjusted $R^2$	-.030	-.066	-.090
Residual Std. Error	11.271	11.466	11.593
$F$ Statistic	0.143 (df=1,28)	0.099 (df=2,27)	0.201 (df=3,26)

The third analysis revealed a minimal contribution of the predictive factors to the explanation of the variance of the dependent variable. Specifically, the phonological loop contributed 0.5% ( $\Delta R^2 = .005$ ,  $p = .708$ ), the central executive by 0.2% ( $\Delta R^2 = .002$ ,  $p = .808$ ) and the second language proficiency level by 1.5% ( $\Delta R^2 = .015$ ,  $p = .528$ ). These contributions were statistically non-significant. None of the explanatory models that are produced was statistically significant. The third model resulting from the addition of the third predictive factor explained a total of only 2.3% of the variance of the variable incorrect word sequences. It is statistically non-significant ( $R^2 = .023$ ,  $F_{3,26} = .201$ ,  $p = .895$ ).

The statistical analysis revealed no correlation between working memory capacity and second language quality. Neither the phonological loop nor the central executive was found to have statistically significant effect on second language writing fluency or accuracy. Both subcomponents support the cognitive and linguistic processes required for the composition of written texts (Baddeley, 1996, 2003; 2006; Kellogg, 1996). The negative correlation may be related to the small sample used in the research or the genre of the writing investigated. The specific findings complied with results from some previous research (Lu, 2010; Manchón et al. 2023) in which no correlation between working memory and second language writing was identified. They also complied partially with results of previous studies. Vasylets and Marin (2021) found a positive link between working memory and accuracy, but no association with second language writing fluency. Other studies revealed working memory's effect on fluency but not on accuracy (Yi & Luo, 2013; Yi & Ni, 2015; Zabihi, 2018). The results of the present study contradicted some previous research in which working memory was found to have positive correlation with or predict second language writing performance (Abu-Rabia, 2003; Bergsleithner, 2010; Mallahi, 2019; Mavrou, 2020; Michel et al., 2019; Mujtaba et al., 2021; Peng et al., 2022; Zalbidea, 2017).

The statistical analysis also revealed that the participants' second language proficiency level was statistically significant for the quality of their narrative texts. Second language proficiency level was found to positively correlate with second language writing fluency and correct word sequences. It was also revealed as a strong predictor of the variance of the specific variables. The data indicated to the team of researchers that the wider linguistic resources one has acquired, the better writing performance they may achieve. The results supported the findings of previous research, in which second language proficiency level was found to be a

strong predictor of second language writing performance (Lu, 2010; Manchón et al., 2023). Also, Teng and Zhang (2024) found a positive correlation between second language proficiency level and second language writing, while Vasylets and Marin (2021) concluded that second language proficiency level mediates the effect of working memory on second language writing performance.

These findings lead to certain educational implications. It is always important that teachers hold a good profile of their classes. Any information related to students' learning characteristics and educational needs are of high importance for developing essential instruction. Identifying any problematic areas in the use of second language would enable teachers to plan more efficient teaching. Improving students' second language proficiency level would have a positive impact on second language writing.

The above presented findings are only indicative of tendencies of the variables studied. The present study exhibited certain limitations. It was a small-scale research study that involved a small sample and made use of one assessment tool for each parameter studied. Some further research which would involve a wider range of participants and would make use of more tools for the working memory assessment could yield more robust results. Working memory capacity and its impact on second language writing could also be studied through the assessment of all its three components (phonological loop, visuo-spatial sketch-pad, central executive). Moreover, the use of more texts and of different genres for the study of second language writing may lead to more reliable results.

### **Conclusion**

Research has yielded interesting findings about the contribution of working memory to second language acquisition. However, the impact of working memory on second language

writing produced by teenagers has received little attention. The present study aimed at investigating the effect of working memory and second language proficiency level on second language writing quality. The statistical analysis of the data revealed no correlation between working memory and second language writing fluency and accuracy. Second language proficiency level, however, was found to be a strong predictor of second language writing performance. These findings, which partially comply with results of previous research, are only indicative of tendencies of the variables involved. Some wider research, which may involve a larger sample or more texts of different genres produced by teenagers, may yield more robust results. Identifying working memory's role in the development of second language writing skill may prove beneficial for the structuring of more efficient teaching approaches and methods.

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**Academic Coaching and Mentoring: Developing a Manual for NEC Academic Mentoring**

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For comments or questions for the author, contact Virginia Aikens at [vaikens@nec.edu](mailto:vaikens@nec.edu)**Abstract**

Many students beginning their journey in higher education arrive with a lack of key knowledge that would enable them to experience academic success. My colleagues and I have found that mentoring and academic coaching programs are a crucial resource for students who enter with a lack of social and educational capital. Over the last semester, I worked to create a Microsoft OneNote Notebook that offers a comprehensive resource for mentors and academic coaches to guide them through the process of introducing students to information, resources, and people that can empower them to become effective self-advocates and experience academic success. The *NEC Mentoring Manual* was designed to address key aspects of the mentoring/coaching process, including on campus resources, general educational resources, and developmental resources. The goal of the *NEC Mentoring Manual* was to give those working as academic mentors/coaches the tools to effectively communicate with students and families, offering access to the information students will need to be successful. Secondly, the *NEC Mentoring Manual* offers tools to ensure that mentors have a clear understanding of their role as coach and/or guide. While the contents of my project are structured for weekly and semester-based delivery, the materials included could be adapted and personalized to students at any institution, and it could also be a valuable resource for any departments looking to develop a strong mentoring program based in their own discipline. In the *NEC Mentoring Manual* there is also a focus on flexibility, relationship building, and addressing individual student goals and self-advocacy.

*Keywords:* mentoring, academic coaching, self-advocacy, student success

The New England College (NEC) Mentoring program is entering its 21<sup>st</sup> year, and has improved student outcomes since its inception. In an interview with Dean Ian Harmon, he shared the data with me that has been collected over the past 4 years of the ACCESS NEC program, and described the specific impact that the mentoring program in general and the ACCESS program in particular has had on New England College, especially the significant retention differences between students in mentoring programs and students who are not connected with those programs (I. Harmon, personal communication, February 7, 2025). ACCESS NEC Mentoring is a secondary program within the Mentoring Department at NEC and was created under a grant from the Davis Foundation to offer mentoring services to historically underserved populations of students. The goal of ACCESS NEC Mentoring is to help close achievement gaps in student performance. In the United States, average 6-year retention rates have been about 60% since 2011, however, when accounting for racial, ethnic, and socioeconomic status, completion rates are considerably lower, with African-American females at 54% and males at 42%, and Latinx females at 63% and males at 54% (Renn & Reason, 2021, p. 139–140). For students enrolled in the ACCESS NEC Mentoring program, yearly fall-to-fall retention rates have risen from 71% in 2022, to 88% in 2024 (I. Harmon, personal communication, February 7, 2025).

Given the success of the NEC Mentoring programs on student outcomes, and the wide variety of interventions and resources used by the mentors in the program, it was my goal to create a resource which gathered all the reference tools mentors need (e.g., important faculty and staff contacts, reference materials on college student development, advice regarding faculty and family communication, detailed sample notes on meeting topics for each week of the semester)

in a centralized location for dissemination to mentors, faculty, and staff of NEC (and potentially other institutions) who are interested in learning more about the organization of the program, its goals, aims, best practices, and ideas for potential future development of the program.

In addition, I have added supplemental materials including a weekly breakdown of each semester of a 4-year program that ties directly to mentoring outcomes created for each year of the program, documentation regarding standard operating procedures for mentoring programs [i.e., Fee-for-Service, ACCESS NEC, and Positive Academic Support System (PASS) Coaching], best practices in communication with students, families, and faculty, and sections designed to answer questions frequently encountered by new mentors regarding NEC operations and technology employed by faculty and students (e.g., Navigate, Blackboard, Zoom). As further support for future and extant members of the mentoring team, research on best practices is offered as part of the *NEC Mentoring Manual*.

### **Literature Review**

According to Pechac and Slantcheva-Durst (2019), current research has supported academic coaching and its compatibility with other student support services and demonstrated how it serves as a link between academic and student affairs aspects of student life. As part of the work on the *NEC Mentoring Manual*, I researched specific situations where mentoring/academic coaching has been proven effective in generating positive student outcomes at the undergraduate and graduate levels of higher education. It is crucial to use the available research to assist in building strong and long-lasting support for students and ensure positive future student outcomes (Pechac & Slantcheva-Durst, 2019, pp. 723–724).

Students I have worked with over the past 4 years consistently have identified the importance of feeling a sense of belonging at NEC and mentioned the importance of having a

mentor who works as a sounding board and support as being important to their success. As a result, two major themes I examined in this literature review were academic coaching elements that have been shown to influence student success and how mentoring can influence and improve community experiences for students in higher education.

### **Understanding and Supporting Student Differences**

Students of all genders and backgrounds may experience difficulties engaging in higher education, particularly in transitional periods such as the start of their higher education career and movement between semesters. According to Bahsha et. al. (2024) transitioning into higher education affords many challenges that can have detrimental effects on a student's academic performance and personal wellbeing. The vital importance of inclusive practices and support systems is key to student success (Bahsha et. al., 2024, p. 49). Though Bahsha et al. (2024) focused on students with autism spectrum disorder (ASD) in higher education, primarily on the importance of incorporating universal design in courses, the aspects of appropriate supports and inclusive practices are also key to mentoring and academic coaching in general. Similar concerns are mirrored for first generation, trans, Asian, and LatinX students, many of whom struggle with cultural adjustments during higher education transitions, accompanied by feelings of alienation, which can contribute to a lack of confidence regarding their ability to build interpersonal relationships in a new environment (Bahsha et al., 2024; Cohen et al., 2022; Garriott et al., 2023; Kodama et al., 2002; Mena, 2022).

The role of academic institutions of higher education on the development of student self-identity is crucial, and student experiences during this period of development go on to affect individuals throughout their lifetime, and sometimes in ways that are highly negative (Cohen et al., 2022; Garriott et al., 2023; Kodama et al., 2002; Mena, 2022). However, when faculty

proactively initiate discussions of campus resources and provide information about where and how to access basic resources and academic supports, this can positively impact student outcomes and sense of wellbeing/belonging on campus (Garriot et al., 2022). Unfortunately, on campuses where students receive stereotypical and negative messages about identity (e.g., race, color, language, poverty, gender identity) the combined effects are even more stigmatizing (Nicolazzo, 2017). Mena (2022) described how the often disproportionately White and wealthy higher education context often presented several struggles for students with differing backgrounds, resulting in psychological effects that led to students experiencing feelings of invisibility (or hyper-visibility), objectification, feeling depleted of energy, and even verbally assaulted (p. 201).

Cohen et al. (2022) recommended a strengths-based approach when working with students, on the autistic spectrum, as findings showed that grounding an approach in presuming confidence led students with autism to develop a strong sense of self, reclaimed from the negative messages they may have been sent previously in their educational experiences. In similar recent studies, approaches that identified and integrated the cultural capital and differing experiences that students brought to their higher education journeys helped those students move toward continued growth and positive outcomes (Garriott et al., 2023; Kodama, 2002; Mena, 2022; Nicolazzo, 2017; Visintin et al., 2024). Positive student outcomes were the result of dedicated actions and movements toward approaches that valued differing voices and incorporated positive changes. The entire institution must see the need and value the work of ethics in leadership in order to set the tone for students (Ciulla, 1996). Transformative leadership in higher education is the responsibility of all members of the community, senior team, faculty, and staff (Adams et al., 2022). In order to truly support student success, the entire institution

must be focused on imparting the principles of ethical leadership (Adams et al., 2022; Ciulla, 1996).

### **Factors Influencing Student Success in Academic Coaching**

Mentoring/academic coaching takes on many forms depending on the institution in question, and methods for communicating with students vary from classroom visits, to face-to-face meetings, to phone calls, and emails. Johnson and Griffin (2024) early proponents of mentoring in higher education, pointed out the crucial importance of these relationships:

(mentorships) promote socialization, learning, career advancement, psychological adjustment, and preparation for leadership in those who are mentored (mentees).

Compared to nonmentored individuals, those with mentors tend to be more satisfied with their careers, enjoy more promotions and higher income, report greater commitment to the organization or profession, and are more likely to mentor others in turn. (p. 3)

But what does research show as the best practices in terms of influencing student success? In Pechac and Slantcheva-Durst's study (2019), one of the strongest predictors of student success was the amount of contact hours students had with an academic coach. Students who met in person with an academic coach were more likely to earn more credit hours at their school. This study in particular focused on coaching meetings at the beginning, middle, and end of the semester, focusing on the differences in performance between students who met with a coach three times, as opposed to students who met with a coach less often, or chose not to meet with a coach at all. Thornton (2025) offered further support for this practice through her case study of a New Zealand school that embedded mentoring among its staff. Thornton emphasized the importance of regular time given for meaningful and regular interactions between mentors and mentees. Given the strong statistical link between student performance and academic

coaching, the authors encouraged administrators to examine ways to further encourage students to participate in additional coaching meetings (Pechac & Slantcheva-Durst, 2019, p. 736).

Another insight from Pechac and Slantcheva-Durst (2019) is the importance of topics discussed when meeting with a coach or mentor. Since mentors are viewed as an essential connector between campus resources and students' needs, an expected focus was placed on the coach as a referral point to other campus services, however, student outcomes were improved most significantly by coaching meetings that focused primarily on students' personal, academic, and career goals, rather than as simply offering referrals to other services on campus. I found this particularly important as a mentor, since though I offer students information and contacts with other services on campus regularly during my contact with them, primarily meeting time with students is focused on their experiences on campus, offering support and actively listening to their concerns and needs regarding both academics and social concerns. I was further encouraged to learn of the importance of face-to-face time with students, as in our current mentoring programs at NEC, weekly meetings are the standard.

Further best practice recommendations supported by current research are detailed by Jones and Smith (2022) in their comparative study of two mentoring programs at business schools located in the United Kingdom. Their findings supported the positive benefits of mentoring, as students reported both improved clarity and confirmed that they would participate in mentoring in future if given the opportunity, in addition to 20% of participants confirming that they had obtained profession appointments within their chosen profession as a result of what they learned in the program. Some of the major recommendations included by Jones and Smith included the importance of a formal process for admittance to mentoring, senior management

commitment to the program, clear mentoring training, and offering students in mentoring some freedom of choice in their mentor when possible.

Major takeaways regarding best practices in the literature around mentoring included the importance of direct contact between mentor and mentee, flexibility in discussions, a formal induction process for mentees, and institutional commitment to the mentoring program.

### **Improving Community Through Mentoring**

Another aspect of mentoring that has offered a positive outcome for students is the ability to contribute to the development of community on campus (Norwood & Baci, 2025, p.4).

According to Norwood and Baci (2025), creation of mentoring programs within departments of an institution can build stronger and longer-lasting ties for students, encouraging their participation in graduate work with the institution, including choosing to complete a masters or doctorate degree program. In 2020, the University of Michigan began the Anthropology Undergraduate-Graduate Mentoring (AUGMENT) program. The Anthropology Department of the University of Michigan was concerned with the lack of diversity in the Anthropology Graduate program and created the AUGMENT program to increase both recruitment and retention of a community of diverse students (Norwood & Baci, 2025). In the AUGMENT program, there was a specific focus on matching students with student mentors with whom they shared commonalities, such as interests and family backgrounds.

Although the creation and implementation of the AUGMENT program at the University of Michigan is quite different from the current mentoring program at NEC, its scope being narrower, as well as being student generated, many takeaways from that program's design and implementation can be utilized by other coaching and mentoring programs, including NEC's current program. Norwood and Baci (2025) pointed out mentoring's positive impact on

undergraduate enrollment and described how mentoring improved experiences within academia and offered students access to transferable skills that will assist them in navigating their future endeavors, including job searches. According to their research:

for many first-generation or marginalized students, everyday aspects of navigating academic require additional tools and resources that are simply not readily available. This particularly applies to the “hidden curriculum” . . . unofficial or unstated expectations students are held to and the implicit messages about attitudes, behaviors, and professionalism. (p. 5)

The authors went on to state the importance of students being able to “see themselves,” the focus being the importance of relationship building, an undergraduate who can see themselves in a mentor, and further see themselves as part of a community, in the case of AUGMENT, as a member of the Anthropology discipline. By extension, this same idea can hold true for students at other institutions. This conclusion is supported by Garriot et al. (2023), as they described mentors and role models in the first-generation college students (FGCS) program as being motivating figures in career development, persistence, and establishing authentic relationships, especially with those who have experienced both classist and racist structures in their educational experiences (p. 524).

## **Conclusions**

Building mentoring programs is a complex process requiring creators to design implementation methods that best meet the needs of a changing and diverse student body, but research has shown there are some elements of the process that are particularly crucial (Norwood & Baci, 2025; Pechac & Slantcheva-Durst, 2019). Students engaged in mentoring/academic coaching experienced positive student outcomes from regular face-to-face meetings with a

mentor where the focus was on their needs, feeling of belonging, and goals as a student and person (Pechac & Slantcheva-Durst, 2019). Students also benefitted from being matched with a mentor with whom they shared commonalities such as interests and backgrounds, and in whom they could see themselves as members of a professional community, encouraging and building a sense of belonging and belief in their own abilities to be a successful student and professional in their chosen field of study (Norwood & Baci, 2025). As Norwood and Baci (2025) stated, “Programs like AUGMENT also serve as a keen reminder, not just to graduate students, but to the larger community of the department and hopefully ultimately of the field, that no one does anything alone” (p. 9). For students entering the NEC community, mentoring could have similar community and academic potential, helping students to find a niche and see themselves as students and professionals.

### **Creation and Development of the *NEC Mentoring Manual***

#### **Purpose**

The processes and procedures for Fee-for-Service, ACCESS Mentoring, and PASS Coaching are clearly defined and laid out in the Standard Operating Procedure guidelines for each program, however, prior to this semester, each document was in a separate location, and had to be shared individually. Also, while there is considerable overlap in methodology and resources between each program, it could be confusing for new mentors to look through each individual resource to find information and best practices. My initial goal in designing the *NEC Mentoring Manual* was to combine these three resources and make them available in a single location, along with a more detailed, week-by-week calendar of notes that could be accessed by all members of the mentoring staff to make for ease of communication as well as to provide

specific checkpoints regarding the most important issues facing students during all parts of the semester.

### **Relevant Manual Audience**

The primary audience for the *NEC Mentoring Manual* throughout its creation and design remained mentors/academic coaches, both current and future. I have been an academic mentor for four years, so I still remember many of the struggles I faced starting out, wondering who to connect my students with when they came to me with a new problem or question. In addition, since new mentors have entered the department over the past 2 years, I could also utilize the questions they had brought to me to help fill in gaps of knowledge not covered in the original standard operating procedure documents, especially given the ongoing changes and developments on campus (e.g., new staff members and new major programs of study). I also considered that such a resource as the *NEC Mentoring Manual* might be useful for other members of the NEC community looking for information about the NEC Mentoring program specifically and information about best practices in mentoring/academic coaching, as well as relevant current research and information about academic coaching and its efficacy in higher education at both the undergraduate and graduate levels.

The *NEC Mentoring Manual* was also designed to be a place to find information that can be directly shared with students and families seeking information about campus processes, procedures, and contacts. Since many students, particularly those in the ACCESS Mentoring group have entered higher education as first-generation students, they are often unfamiliar with standard college policies and procedures. One way that the ACCESS Mentoring assists these students is by connecting them with their financial aid counselors once each semester, as well as

through on-going encouragement by mentors to engage in self-advocacy via contact with faculty, particularly their major program of study faculty advisors.

Not only is the *NEC Mentoring Manual* designed for utility within the NEC community, it is also my hope that eventually it could be shared with other institutions and programs seeking to develop and/or further enhance their own academic supports, thus contributing to student equity in higher education.

### **Design Process**

Over the past 4 years, after trying other methods to keep records of individual student meetings, and with input from other members of the NEC Mentoring Department, I decided that using Microsoft OneNote was the best format for keeping track of student records, ensuring that I was able to keep all relevant information in a central location, and making individual notes easy to locate and share if necessary. After each meeting, I upload my weekly notes to the Navigate Student Success System as reports on appointment. Although some other mentors currently use alternative formats of note keeping, fitting with the individualization of the program, after sharing the project with the other mentors, in particular one who began work at NEC in January 2025, the response was positive, and several mentors have offered feedback on the utility of the design, and the ease of use in locating helpful resources.

### **Components of the *NEC Mentoring Manual***

To make the *NEC Mentoring Manual* as comprehensive and useful as possible, several sections have been included and ordered in a way that will offer current and future mentors/coaches easy access to resources and help them answer questions presented by faculty, students, and families. The sections include:

- *NEC Mentoring Manual* Introduction

- Mentoring Program Information and Data
  - Mentoring Program Retention collected by the Dean of Student Services,
  - Interviews with the Dean and the Director of Mentoring,
  - Data I have collected on my mentoring caseload
    - Retention of students
    - GPA data
    - Leadership/Student Activities participation
- Standard Operating Procedures
  - Fee-for-Service Mentoring
  - ACCESS NEC Mentoring
  - PASS Coaching
- Mentoring Program Checkpoints (created by the Mentoring Department for pinpointing relevant information to be worked on with students each year of their participation in the program),
- Eight Sections Detailing Weekly Meetings (offering a detailed overview of all four years of the mentoring program by semester and week)
- Student Questionnaires (questionnaires by semester to help with student self-evaluation and mentor feedback on student reaction to mentoring),
- End of Semester Evaluation Forms (forms for mentors to complete that offer anecdotal information about student engagement, strengths, areas for improvement, and plans for further mentoring),
- End of Semester Disposition Forms (created to aid in mentor self-reflections),

- Leadership Coaching (references to useful sources that can offer insight and ideas for mentors to encourage student leadership and self-advocacy),
- Resources (including links to NEC campus resources, as well as information on student development grounded in theory and reflecting the wide variety of social locations and individual needs of students, with summaries of sources),
- Sample Contact Emails (with samples and information on best practices for contacting families and faculty members),
- Recommendations for Program Development
- Fall and Spring Semester Notes by Week Templates (useful for offering mentors a starting point in their weekly meetings with students, ensuring that students will be aware of upcoming events and deadlines).

### **Implementation Strategy**

Already the NEC Mentoring Department is utilizing the *NEC Mentoring Manual* as a resource for meetings with students. Both the newest member of the department and I are using the weekly notes as templates for meetings with all students during the Spring 2025 semester. The goal in the future is to supply all incoming mentors with access to the *NEC Mentoring Manual* as a convenient place to share information and resources to help them get started as program members.

### **Discussion**

While working on the creation of the *NEC Mentoring Manual*, I met with the Dean of Student Success and the Mentoring Director to complete a comprehensive review of the NEC Academic Calendar to ensure that weekly notes covered important issues to reference, availing students of the most timely and important issues for them to reflect on in weekly meetings. In the

future, I will need to review this information prior to each new year to ensure that suggestions remain timely, given that specific deadlines change, however, since the goal is to offer students advance notice about upcoming deadlines so that they may proactively handle important meetings themselves, the alterations are expected to be minor over all.

It was also important to review student development theories in detail as well as leadership theories to ensure that the goals and timetables of the project were aligned with the most current scholarship. It was my goal to offer a centralized location where mentors (and others utilizing the resource) would have access to links to the most current information on theories applicable to a wide variety of students of all genders and backgrounds. This alerted me to the importance of continued self-reflection in my own work with students, and focusing on specific needs and how they differed in my own caseload. It also afforded me the opportunity to work and meet with faculty and staff outside the mentoring department, to share information about our program and what we can offer as support for students. In discussion with my own faculty advisor, I was made more aware of the project's potential utility for faculty and staff outside of the Mentoring Department.

Throughout the process of creating the *NEC Mentoring Manual*, I learned even more about the importance of belonging and community building for students in higher education as well as the vital importance of offering students the support they need to become strong and effective self-advocates in order to prepare them for success in higher education and in their lives beyond the academy (Norwood & Baci, 2025; Pechac & Slantcheva-Durst, 2019; Roper, 2024).

### **Community Building and Belonging**

Ensuring community and belonging in higher education is crucial to student success, an analysis of belonging in higher education conducted by Allen, et. al. (2024) described several

key identifying features that influence student belonging and included four themes across studies; “institution-wide approaches; creation and maintenance of inclusive environments, educator practices; and quality relationships with educators and peers” (p. 22). Student engagement in mentoring/academic coaching can fit as part of a “coordinated approach that combines institutional strategies, inclusive practices, effective educator engagement, and the nurturing of interpersonal connections” (Allen, et al., 2024, p .23), as a way of increasing students’ sense of belonging. In the past I have experienced this with my own students, one of whom was seriously considering transferring to another institution, until they became involved in student leadership within their major department of study. Although reluctant at first, after meetings where we discussed potential club and activity opportunities, they decided to try, though they had been reluctant to participate in club activities in the past. After first participating and then becoming an elected executive board member of the Criminal Justice Club, this student gained acceptance in a new community and became more comfortable communicating with professors and their academic advisor. They are currently on track to graduate from NEC with the class of 2026.

Over the past 20 years, research studies have demonstrated the vital importance of a sense of belonging in higher education and how belonging can determine not only academic success but also psychological health and well-being (Allen et al., 2024). Allen, et. al. (2024) stated that a sense of belonging in higher education, “influences key psychological constructs such as self-esteem, resilience, and the intrinsic enjoyment of learning” (p. 3). A sense of belonging has been shown to translate into specific benefits for students including self-efficacy, improved retention, and engagement on campus (Allen et al., 2024).

In the NEC Mentoring Program, our number one goal is always to build relationships with our students, to learn about their interests, goals, and strengths and to bring them into a brave space where they feel comfortable using their voice and engaging with their academic community, not only as a student, but also as a person. It is my personal goal that building a clear and useful guide for mentors will be a part of helping students to continue to achieve this goal as we continue to grow and develop our mentoring programs at NEC.

### **Student Self-Advocacy**

A second crucial goal of mentoring/academic coaching has always been to be models, helping by demonstrating the skills students need to experience greater self-advocacy. Mentors/academic coaches are not designed to be “individual aides” but guides, assisting students in learning the processes, procedures, and requirements of the institutional milieu, offering them access to information that they did not have in the past so that they will be equipped to meet the challenges and expectations of their faculty and administrators in higher education. Whether a student is a person with an identified educational disability, a first-generation college student, or an experienced student returning to college after a break, the goal is to meet students where they are, and share information while building a strong relationship that offers students a place to self-reflect and come to a greater understanding of what they are seeking from their education. I have come to strongly believe self-advocacy is crucial for students in order to communicate effectively and obtain the support and information they need in order to be successful both in higher education and post-graduation.

The *NEC Mentoring Manual* weekly meeting templates offer timely information to mentors that they can share with students to actively encourage students at all levels of skill development in self-advocacy to step up and take ownership of their education. These reminders

are also useful talking points when working with first-generation students who may be unaware of standard (and non-standard) processes and procedures in higher education. The same is true for students with disabilities attending higher education institutions for the first time, who may be unaware of supports available to them or how to access these services. According to Roper (2023), students with disabilities who access support are more likely to experience positive educational outcomes at the higher education level than those who do not. This is especially important for these students, as “by 2009, only 40% of students with LD who had enrolled in postsecondary school had completed their program” (Newman et al., 2018, p. 6). Students may also enter higher education with preconceived ideas regarding what support can look like, or even post trauma regarding the stigma of receiving services. Offering all students, regardless of background or educational experiences, the opportunity to self-advocate is a primary goal of our academic mentoring and coaching.

### **Conclusions and Recommendations**

The process of designing and working on the *NEC Mentoring Manual* has led me to a greater appreciation, not just of the work institutions of higher education are engaged in, but the importance of expanding that work and building even more opportunities for mentoring at all levels of our institution, to ensure student success.

Two specific recommendations I would offer to help the further development of the mentoring program are: (a) expanding access to mentoring for first-year students and transfer students, and (b) inclusion for NEC senior mentoring students to leadership opportunities in supporting the ACCESS NEC Mentoring program. Providing both first-year students and transfer students the opportunity to access the Mentoring Program for either 30–60 minutes a week for their first semester at NEC could be a strong support for students who are joining our

community, offering them the opportunity to build relationships with staff members who can answer their questions and guide them to services they need over the course of their first semester at NEC would enhance their introduction to our community. I would also recommend the future organization of student participation in mentoring for senior students who have engaged in mentoring throughout their time at NEC as student guides who can recommend mentoring services and explain to incoming students how mentoring can help them meet their educational goals. The NEC Mentoring programs, both the ACCESS NEC Mentoring program and the NEC Fee-for-Service Mentoring programs have been shown to have a significant positive impact on student success and retention and should be expanded for use by even more students in the future at both NEC and in other institutions.

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**Appendix A*****NEC Mentoring Manual Materials***

This appendix is included to offer readers a sample of the materials contained in the NEC Mentoring Manual. For any readers interested in reviewing a complete copy of the NEC Mentoring Manual, please email the author at [vaikens@nec.edu](mailto:vaikens@nec.edu). All figures included in this appendix are pictures taken from the *NEC Mentoring Manual*. I generally recommend using the web version of the OneNote program for ease of viewing.

**Figure 1**

*List of Tabs Included in the NEC Mentoring Manual*

NEC Mentoring Manual - March 2025 - Virginia Aikens - Capstone	
+ Add section	+ Add page
NEC Mentoring Manual Introduction	NEC Mentoring Manual
NEC Mentoring - Info + Best Practices	
Standard Operating Procedures [PASS-AC...	
Mentoring Program Checkpoints [Studen...	
Note on Semester Breakdown of Meeting...	
Resources FAQ - Blackboard, Navigate, etc	
Leadership Coaching	
1st Year - Semester 1 - Weekly Meeting C...	
1st Year - Semester 2 Weekly Meeting Ch...	
2nd Year - Semester 1 - Weekly Notes	
2nd Year - Semester 2 - Weekly Notes	
3rd Year - Semester 1 - Weekly Meetings	
3rd Year - Semester 2 - Weekly Meetings	
4th Year - Semester 1 - Weekly Meetings	
4th Year - Semester 2 - Weekly Meetings	
Student Questionnaires By Semester	
End of Semester Evaluations	
End of Semester Disposition (Mentor Not...	
Sample Contacts - Basic Email Templates	
Fall Semester - Notes by Week	
Spring Semester - Notes by Week	
Recommendations for Further Program D...	

**Figure 2***List of Resources in the NEC Mentoring Manual*

Aikens - Capstone ▾	
+ Add page	
A Note on the Following Mentoring Progra...	
Does Mentoring/Academic Coaching Increa...	
Interview with Ian Harmon – Dean of Studen...	
Interview with Erin Brooks – Director of Men...	
ACCESS Mentoring – Retention Data	
ACCESS Mentoring – Data – ACCESS NEC GP...	
ACCESS Mentoring Data-Leadership [Virgini...	
ACCESS Mentoring Data-Diversity, Equity, a...	

## Does Mentoring/Academic Coaching Increase Student Success and Improve Retention? Resources for Study

Friday, March 07, 2025 2:21 PM

### Resources for Study

#### References

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**Note: Study that analyzes the impacts of academic coaching. The study provides evidence of the positive impact on GPA of students (particularly at-risk students) who attended one or more sessions of academic coaching in a semester.**

Garage, K. A. A., Perera, D. A. S., & Wijewardena, M. A. D. N. (2021). Mentoring and Coaching as a Learning Technique in Higher Education: The Impact of Learning Context on Student Engagement in Online Learning. *Education Sciences*, 11(10), 574. <https://doi.org/10.3390/educsci11100574>

**Note: Quantitative and qualitative study completed during a fully online semester. Data supports the conclusion that mentoring enhances student outcomes both academic and personal.**

Norwood, A. L., & Baci, E. (2025). [Augment]ing the experiences of historically marginalized students in anthropology through mentoring. *Practicing Anthropology*, 1-12. <https://doi.org/10.1080/08884552.2025.2459279>

**Note: Article describing the creation of a mentoring program between graduates and undergraduates. Article describes the importance of mentoring on student success, particularly for marginalized students. Also emphasizes the importance of connecting weekly with a mentor who shares interests and life history similarities.**

Pechac, S., & Slantcheva-Durst, S. (2019). Coaching toward completion: Academic coaching factors influencing community college student success. *Journal of College Student Retention: Research, Theory & Practice*, 23(3), 722-746. <https://doi.org/10.1177/1521025119869849>

**Note: This article discusses the academic coaching factors that are more likely to improve success for students in community college, such as: coaching contact frequency, coaching topics (registration/career advising), and one-on-one coaching.**

**Figure 3***Discussion Topics for Week Two of Fall Semester***Week 2 [ConNEctions Fair/Guardian Contact]**

Friday, March 07, 2025 2:50 PM

1. Sent morning text reminder
  2. Immediate concerns?
  3. New Absences:
  4. New Alerts:
  5. Books?
  6. Agenda?
  7. Schedule planned out?
  8. Do you have study time set aside?
  9. Tutoring necessary? Have you visited the Writing and Support Center (WASC)?
  10. Blackboard – check at least 2x per day
  11. Email – check at least 2x per day – respond to text messages
  12. Syllabi review
  13. Calendar on Blackboard
  14. Outlook setup
  15. Assignments due this week?
  16. Upcoming?
  17. Discussion Boards – check to see if you have to submit weekly for your class
  18. Other concerns - [Wellness, Office of Disability Services, Office of Diversity and Inclusion]
  19. Check – campus location questions
  20. **Complete Report on Appointment in Navigate**
- **This week – prepare for faculty contact – introduction**
  - **This week – guardian contact – introduction – confirmation of contact with student and meeting times**

## Related Mentoring/Coaching Checkpoints [First Year]

1. Understanding Academic Technology
2. Understanding Liberal Arts Studies (LAS)
3. Academic/Executive Functioning Skills
4. Mentoring Coaching Competencies
5. College Living

**Appendix B****Reference Sources Included in the *NEC Mentoring Manual*—College Student Development  
and Student Leadership Development**

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## **Practical Techniques for Reducing Cognitive Load in School-Age Children**

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### **Abstract**

This systematic review is a consolidation and organization of literature pertaining to the cognitive load theory and its applicability in a classroom setting. Theories such as the flipped classroom, the spacing effect, and learning by teaching have been staples in the classroom for decades, but the literature connecting these theories to cognitive science in a way that is accessible to the teaching community appears to be lacking. While there have been some practical works written for the purpose of providing science-backed teaching methods that explore how cognitive load theory can be utilized in the classroom, most notably a guide written by the government of New South Wales, there may still be room for research. By first describing the theoretical views of how cognitive load affects students in various contexts and then synthesizing practical literature to define and suggest general methods for utilizing these theories in a variety of class subjects, the field of cognitive science can more readily bridge the gap between theory and practice, making classroom applications more informed. The techniques described herein are organized and adapted so as to create an ideal, practical environment that reduces cognitive load, enhancing the educational experience. Practices such as using the CHunking, Ordering, and Patterning (CHOP) technique instead of just chunking, for example, or perhaps writing teaching scripts instead of traditional notes, can be pathways to success that

reduce the strain caused by intrinsic cognitive load while enhancing the efficiency of germane cognitive load.

*Keywords:* cognitive load theory, practical class environment, theory and practice, enhanced educational experiences

The human brain is only capable of storing and actively processing a limited amount of information at one time (Miller, 1994). This capacity for active cognitive processing is called cognitive load. The concept of cognitive load has been officially recognized in the scientific community since around 1988 (Sweller, 1988) and has continued to be an influential component in the way in which both educators and learners approach education, with a vast number of studies presenting important findings that increasingly contribute to our understanding of the way we learn (Ungvarsky, 2024a). While these many studies have improved our knowledge of how cognitive load affects learning, I propose that there are still gaps that could further enhance the applicability of cognitive load theory (Sweller, 2016).

Cognitive load theory (CLT) originated in 1988 whereby a group of researchers led by Dr. John Sweller conducted an experiment involving test subjects performing mathematical calculations by aiming to reach a goal number through multiplying a given number by 3 and subtracting 29 a set number of times (Sweller, 1988, 2016). Sweller (1988, 2016) and their team noticed that, although the subjects had high success rates when doing these calculations, very few of the subjects became aware of the pattern presented to them. This, to the researchers, was evidence of a high cognitive load making any additional cognitive processes difficult to initiate. Thus began the concept of CLT (Sweller, 1988, 2016).

Cognitive load theory, though it has already been 37 years since its inception, potentially still has a long way to go before its applications in a classroom setting can be fully realized (Ouwehand et al., 2025; van Merriënboer & Sweller, 2005). Moreover, while there is a body of research that backs up, improves upon, and alters CLT, many of these studies have related to very specific focuses. For example, some research places an emphasis on using technology to reduce cognitive load (Toh & Tasir, 2024), while other studies emphasize a particular aspect of mathematical practice (Cory & Ray, 2023; Toh & Tasir, 2024). Since there are diverse research reports in the literature in the field, synthesizing the information from these data can be beneficial in uncovering underlying factors in the quest to determine a more encompassing set of rules for educators to utilize.

The purpose of my systematic literature review is to examine the findings from research conducted within the realm of CLT and synthesize the literature into a more manageable, applicable set of common philosophies or techniques that a teacher can use to more effectively engage students, enable a higher rate of retention among students, and potentially encourage more successful academic performance. Factors such as student engagement, working memory capacity, motor task performance, and several others are all influenced by cognitive load, meaning that attention, retention, motor skills, and others are possibly affected by cognitive load, along with the development of these important functions (Buckley et al., 2022; Ninomiya et al., 2024; Winthrop et al., 2025). By understanding which methods best compliment learning through the lens of CLT, students and professionals can reevaluate their own abilities and improve such functions in a real-world setting (Szulewski et al., 2021). The goal of helping teachers to facilitate learning by gaining knowledge and techniques in relation to CLT is to

enhance teaching and learning in real classrooms that will carry over to life outside of school (Centre for Educational Statistics and Evaluation, 2011).

### **Theoretical Background**

Before I can begin to break down the studies and compare data, I must first define the types of cognitive load in order to avoid misunderstanding when developing practical rules for applying this theory in the classroom. Pande (2022) identified three different types. First, intrinsic cognitive load refers to the unavoidable and fixed level of cognitive effort required to perform a task. It is only influenced by the already-existent abilities of the learner. Second, extraneous cognitive load is best defined as the load placed on a learner due to inefficient or unnecessarily difficult learning tasks and/or environmental distractions. Third, germane cognitive load is the effort in using one's resources and mental processes to facilitate learning of the task being presented. When teachers and students understand the types of cognitive load, both teachers and students can then enhance specific ways to work successfully with cognitive load (Pande, 2022). An example can illustrate each of these types of cognitive load. When a learner of English as a foreign language is tasked with understanding a written sentence, the intrinsic cognitive load is the proficiency required to make meaning of each word within the sentence. Extraneous cognitive load could be the learner's current circumstances at home, affecting his or her concentration, distracting the learner. Germane cognitive load could be the learner inferring the meaning of words within the sentence based on context or previous knowledge.

For my review of the literature, I will focus on intrinsic and germane cognitive load. Studies relating to extraneous cognitive load will be omitted, as this type of cognitive load is

often the result of external factors indirectly and circumstantially connected to a classroom environment and of which teachers have little control.

Foremost, when considering cognitive load, strategies should be used with students in their classes to help reduce cognitive loads. Alleviating the effects of high cognitive load (e.g., reduced working memory capacity, impaired learning and retention, increased frustration and anxiety, surface-level processing, decreased academic performance) is crucial for student learning. There are several teaching strategies for alleviating high cognitive load including chunking, scaffolding, structuring, and visual aids (de Jong, 2010). While these are commonly used teaching strategies, they are rarely used to reduce cognitive load because educators are unaware of their applications for this issue. (de Jong, 2010). Thus, reevaluating and reimagining the applications of these methods can have valuable impacts on the education system as a whole, if presented in a more unambiguous way.

### **Stress Management**

Intrinsic load has been connected to subjective stress levels, indicating that it may be an educator's responsibility to reduce stress placed on a learner in order to assist the learner in performing tasks at a relatively high level (Almarzouki, 2024). Stress is often associated with increased physiological markers such as pupil dilation and tachycardia, defined as an increased heart rate, which, while these physiological adaptations are often correlated with improved performance, prolonged exposure to stress results in an impairment of synaptic plasticity in the hippocampus, an area responsible for learning and memory (Almarzouki, 2024; Ekin et al., 2025; Skulmowski, 2023). However, other studies have concluded that acute challenge stressors used in positive ways may have a positive impact on the performance of individuals in a task performance context (Kubicek et al., 2023). These research results suggest that intrinsic

cognitive load is influenced at the individual level and shaped by many factors, including exposure time, individual resilience to stressors, and the task being performed (Ayres et al., 2021). Therefore, it seems reasonable to infer that in order to properly reduce the high subjective cognitive load on a student, one must consider several factors: the individual's resiliency, the acuteness and severity of the stress, the degree of stress already present in the subject, and the perceived difficulty of the task at hand (Ayers et al., 2021). It seems to be important for teachers to be able to develop ways to understand and work with each student as they develop learning experiences for our classes.

Working with individual cognitive loads and stressors may appear to be impractical in the context of a classroom, as each factor is measured on an individual scale. However, rather than completely mitigating stressors in the classroom as a blanket action, educators can use stressors strategically and in line with the research. First, educators must understand that acute and chronic stressors play opposing roles in performance. According to Fogt et al. (2010), finding the correct combination of stress and support is crucial for student success, while chronic stressors, regardless of the source, have been shown to reduce cognitive functioning. For teachers and students, reducing chronic stress and employing appropriate acute stress may have the most beneficial influence on utilizing cognitive load to the advantage of students' academic performance.

How do teachers develop the proper amount and types of stress in the setting of a traditional classroom? For example, if there is an important test approaching, it may prove more effective to create an atmosphere where students can feel most at ease, such as providing additional support in the form of helpful review lessons or being readily available when students have questions regarding the content. Teachers can help students deal with acute stress by using

strategies such as gamification during review lessons or a competitive study session. In reality, a teacher knows their classroom dynamics best, and the resiliency of students and the tasks required of them are likely best known by the teacher (Fogt et al., 2010). From my experiences, to properly use a strategy like this takes careful planning, but it may prove highly effective if implemented in an environment in which students feel safe.

### **Intrinsic Cognitive Load**

Intrinsic cognitive load is defined as the inherent complexity, characteristics, and demands of the content being learned (de Jong, 2010). For example, material to be learned that is highly interactive and requires a large degree of mental work to complete is considered to have a high intrinsic cognitive load when compared to a task that demands little activity or is straightforward in its design (de Jong, 2010). When more cognitive resources are required to complete the task, the internal cognitive load increases (van Merriënboer et al., 2003). Additionally, intrinsic cognitive load also depends on the way in which learning material is presented. For example, if learning content is presented in a way that builds up from simple concepts to more complex material, the intrinsic load is lessened (van Merriënboer et al., 2003). By understanding the sources and effects of intrinsic cognitive load, educators can identify and implement strategies to reduce this load.

### ***Chunking***

A practical method of memory retention that many educators in the realm of mathematics are likely familiar with, but can be used in a number of ways in many areas of study, is chunking. Chunking is the process of grouping large amounts of information into smaller more manageable sections, or chunks, to aid in the retention of this information (Ungvarsky, 2024b). Using a chunking method requires relatively little experience or training, and can be taught within a

comparatively short timeframe, making it an effective practice to add to any lesson. Chunking has the benefit of alleviating the cognitive load placed on an individual by turning large quantities or varieties of information, which is limited by our brain's capacity for storing data, into fewer, more structured information (Edwardson, 2024), which essentially "frees up" space to perform more cognitive tasks (Edwardson, 2024). Therefore, chunking is a vital part of increasing our cognitive efficiency, which reduces load very much like defragmenting a computer.

How can chunking be useful in a classroom? Many teachers are familiar with chunking in terms of remembering long numbers such as phone numbers and math problems, or acronyms that assist in remembering science concepts and historical events (Edwardson, 2024). However, chunking can be useful for the retention of other subjects, such as foreign language acquisition or even music and art (Godøy et al., 2010). While chunking itself is well-known and can be adjusted and applied to any subject with relative ease, at its core, it is not so far away from memorizing encoded information. For some time now, strict memorization has been losing popularity in the educational worldview, being replaced by more intuitive and holistic methods (Azzam & Easteal, 2020).

In order to more effectively utilize chunking for the purpose of reducing the cognitive load in learners, I researched ways to not only chunk but also organize and develop connections. This is where the CHOP technique comes in (Syn & Batra, 2013). CHOP is an acronym for "CHunking, Ordering, and Patterning" and refers to the brain's natural tendency to find patterns in seemingly unrelated information (Syn & Batra, 2013, Abstract). Using the CHOP technique, educators can lead instruction by following a few simple steps which take only slight preparation. First, by chunking the information into more manageable groups, learners have an

easier time remembering larger amounts of information. Next, ordering these groups into categories makes it easier for a learner to understand the values of each chunked group. Finally, learners can then discover patterns related to every group's interaction with each other and form connections for assimilating and drawing conclusions based on this knowledge (Syn & Batra, 2013). For example, when introducing a new sentence structure in a foreign language class, educators can break the pieces of the example sentences into phrases, effectively chunking the information to ease learning (Syn & Batra, 2013). Then, the learners can work together with the teacher in ordering these phrases into groups based on similarity or position within the sentence. Finally, the teacher can guide the learners in discovering what makes these sentences accurate and why, by synthesizing the chunked and ordered parts of speech. Chunking as a stand-alone teaching method is a useful tool in education, but if the goal is to also rouse critical thinking, I believe the CHOP technique is a beneficial expansion on chunking (Syn & Batra, 2013).

### ***Scaffolding***

Another approach for reducing the intrinsic cognitive load for learners is scaffolding. Scaffolding encompasses a large range of philosophies and teaching strategies, so, in this literature review, I will highlight practical applications. The goal of scaffolding is to provide a systematic approach to learning in a way that helps to reduce the gap between previously-acquired knowledge and the knowledge being introduced, also known as the zone of proximal development, or ZPD, first made popular by Soviet psychologist Lev Vygotsky in the 1930s (as cited in Flair, 2024). Scaffolding has been observed both to enhance creative performance through stimulation of the prefrontal cortex, and improve instructor-learner interbrain neural synchronization, allowing a teacher to better understand the possible next steps to take in the instructional process (Jin et al., 2024). Moreover, properly utilizing scaffolding techniques has

been shown to positively affect student engagement and psychological well-being, possibly due to the improved synchronization between instructor and student (Jin et al., 2024).

What can be done in a classroom to best use this effect to our advantage? As previously mentioned, scaffolding is a term used to describe a variety of techniques. However, a few practices stand out as more effective (González-Calero et al., 2015). For example, application activities, or the hands-on experiential learning of a concept using projects, experiments, or simulations, have been shown to exhibit a greater effect on retention and recall when compared to books or even games (Huang et al., 2023). Furthermore, a practice called intensive scaffolding, which is a subtype of scaffolding whereby the instructor gradually reduces their interventions by giving students more freedom and power in their formulation of a solution to presented problems, appears to be more effective at improving learners' ability to understand and retain information (Gonzalez-Calero et al., 2015). In the context of cognitive load, these two techniques seem to have synergistic effects, giving students more opportunities to build their skills and confidence (Huang et al., 2023).

By creating an environment where a teacher presents a real-world problem requiring students to work on a solution and assists students in the work necessary to solve this problem, the initial cognitive effort needed of the students is lessened (Gonzalez-Calero et al., 2015). After students successfully work with the teacher to solve a problem, the practice can take place again, but with less help from the instructor. The process can be completed as many times as necessary until the students are able to work through similar problems on their own. From an intrinsic cognition standpoint, the subjective difficulty of the concept is diminished gradually while the working memory of the students relating to the concept is enriched through the combination of these techniques (Gonzalez-Calero et al., 2015).

An example of this may be an art teacher presenting a primary school art class with directions to create the secondary colors orange, green, and purple, and place the primary colors in front of students. At first, the teacher can show them how to create one of the colors through mixing. Next the teacher can work with students in small groups to work together for each group to create the secondary color. Then the teacher may leave it up to each group to create the third secondary color. Since research has demonstrated that these best practices of application activities and intensive scaffolding are valid, this should instill a deeper memory of color combinations, while reducing the perceived cognitive load on students through initial intervention by the teacher. These kinds of techniques give students opportunity to learn important curriculum in ways that ensure that cognitive load is lessened and student confidence is raised. (Gonzalez-Calero et al., 2015).

### ***Structuring***

It is important for teachers to consider cognitive load as we structure (e.g., design activities, order of teaching a topic, order of activities within a lesson, omit task switching activities) our lessons. Proper structuring of lessons, classroom activities, and overall curriculum design necessitates a multifaceted view of teaching. One of the factors that influences the order and structure of a lesson is the potential for task switching. Task switching is exactly what it sounds like—switching from one task to another (Lu et al., 2019). Task switching places a heavy demand on the cognitive load of an individual mainly due to a phenomenon called the “switch cost effect” (Lu et al., 2019). This effect can be witnessed frequently and clearly when viewing a bilingual individual switching between languages. The costs of switching tasks are generally observed as being due to the stresses imposed on an individual relative to the difficulty of the process being switched to (Lu et al., 2019). The greater the difficulty of the processes, the higher

the stress level and subsequent switch cost of the individual. This suggests that the increase in cognitive load is a result of factors both within and outside of the individual's control.

On the other hand, dual-tasking, or the ability of a task performer to handle multiple tasks at once, is also often mentioned as coming with a cost to performance, usually attributed to competing areas of the brain responsible for both tasks (Mac-Auliffe et al., 2021). While dual-tasking likely is also influenced by the relative difficulty of the tasks, there exists a third factor to be considered here, according to research. Those who switch between singular tasks pay a certain cost to performance, but those who switch between performing multiple tasks at once are under greater cognitive load (Mac-Auliffe et al., 2021). While the idea that performing multiple tasks simultaneously requires more brainpower may seem obvious when looking at real-world scenarios, it warrants weightier reflection in the context of learning in a classroom setting. For example, Sousa (2022) explained that some research has determined that multiple tasks cannot be done simultaneously; each task ends up in a task switch.

An example of this in the classroom can be in a foreign language study class. Bultena et al. (2014) reported that switching from language one (L1) to language two (L2) resulted in larger switch costs than from L2 to L1, and the less proficient a learner's L2, the higher the cost of the switch. There are two factors at work in this case. The subjective stress level of the learner is probably proportionate to the proficiency of the learner's L2, assuming their resilience is controlled. As already mentioned, stress increases cognitive load. Secondly, language learners often develop listening skills at a faster rate than speaking skills, making it easier for an individual to hear a sentence in L2 and convert it to L1, rather than the other way around. But what if a task were introduced that required dual-tasking? For instance, requiring a learner to listen to a story in L2, and answer critical thinking questions in L2 in writing?

Task switching is a practice that often appears in a foreign language-learning class, as students are required to exhibit listening comprehension in written examinations. When students must listen to another language and then write responses to written questions in their assessment activities, there is the potential to dramatically increase the cognitive load on students, as these tasks combine dual-tasking with task-switching. Should this be avoided? In fact, it probably cannot be completely avoided, as it is an instrumental part of language (Bultena et al., 2014). However, the cognitive effects of this dual-tasking and task-switching can be reduced by implementing an increasingly accepted method of teaching called the “flipped classroom” (Etemadfar et al., 2020).

A flipped classroom is simply a learning model whereby students learn material prior to coming to class, then later being instructed on it or led in a discussion about it in the classroom. The teaching model, while relying on students’ autonomy and self-motivation while outside the classroom, is an effective measure for decreasing the cognitive load on learners if done properly (Etemadfar et al., 2020). But can it be implemented in a setting where students have little time to study at home? The underlying techniques of a flipped classroom can be adjusted to fit within a single lesson as well.

One potential practical option for flipping an individual lesson is to first guide the students in reading through and understanding the critical thinking questions before beginning the listening comprehension story (AlAli et al., 2024). This activity is, at its core, the same principle as a traditional flipped classroom, and many educators already use this technique without equating it to a flipped classroom, and it is highly effective at reducing cognitive load for students. By ensuring the students are prepared to listen for specific answers to the written critical thinking questions, the task of reading and understanding the written questions transitions

from a dual-task to a task-switch, helping to alleviate the stress and the additional cognitive cost brought upon by dual-tasking.

### **Germane Cognitive Load**

Germane cognitive load involves students taking what they already know and use their knowledge and skills to learn new material. In germane cognitive load, the more students understand and know, the more effectively they can learn new material. If teachers can help students connect their already developed skills, mental schemas, and knowledge to new learning, the more likely their new learning will make sense and have meaning for students (Costley, 2020). Through these techniques, the cognitive load placed on students can be minimized through more holistic practices that accentuate a learner's ability to comprehend and then analyze information.

According to Greenberg and Zheng (2022), there is conflicting evidence on whether or not germane load itself should be separate from intrinsic or extraneous cognitive load, in that there is little effect on the performance outcome of tasks in subjects with a high capacity for intrinsic load versus those with a low capacity in a task when germane load varies. It can therefore be speculated that it is not simply a matter of effort when performing a task, but the preparedness of a student. If a learner has high germane resources (e.g., knowledge, skills, schemas), then the amount of mental energy being utilized to perform a certain task is lessened, making the overall cognitive load easier to manage in theory (Greenberg & Zheng, 2022).

Furthermore, the level of preparedness can vary greatly from individual to individual. When students have a more solid foundation of knowledge and skills, it has a positive impact on the average cognitive load of the learners within a classroom. The influence of germane resources is an important variable in learning (Klepsch & Seufert, 2020). To summarize, the

preparedness of a learner can potentially compensate for the intensity of the intrinsic load presented to the learner and the effort that the learner puts forth in their task.

From a practical standpoint, increasing germane resources can lower overall cognitive load, meaning that by providing learners with methods that complement the structure of learning, educators can decrease the stress and improve performance of learners in an education experience (Costley, 2020). By exploring the techniques that drive efficient and focused learning such as spaced repetition, retrieval practice, and knowledge sharing, cognitive load can be managed and efficient learning can take place. While the techniques presented here will be steered toward germane load, it is also vital not to emphasize one type of load over another, as each one plays its own role in the bigger picture of student success. Therefore, when examining the benefits of the following teaching methods, it is important to understand their function and use them collaboratively with other techniques described here in order to form a more complete classroom experience. Put simply, there are times to use one technique, there are times to use others, and there are times to use multiple techniques.

### ***Spacing and Micro Learning***

One method worth considering is the spacing effect (Chen et al., 2018). It can be seen most notably in language learning apps and advertising, whereby the information is provided, then a specific amount of time relative to the degree to which the information is understood passes, after which the information is repeated. This process has been observed to have positive outcomes in assessment scores, especially when compared to traditional studying methods that generally expect a learner to understand a concept fully and in only one span of time, but for longer periods of time within that span (Chen et al., 2018). The spacing effect is a useful tool that

utilizes the brain's tendency to grow more familiar with repeated information exposure to facilitate learning.

Chen et al. (2018) discussed the spacing effect which has applications for teaching to reduce cognitive load. To explain in a more basic sense, the typical method for succeeding academically is to “cram” information immediately before an assessment, enabling the learner to recall the information during test time. However, the spacing effect posits that this is not the most efficient method for learning a concept fully and deeply. No matter if the content is related to simple vocabulary lists or more involved knowledge like scientific constructs, the benefits of spacing out the information has been shown to improve memory retention, reducing the germane cognitive load by allowing for more effort to be placed on learning the information that has not been mastered and less effort on those that are already retained (Chen et al., 2018). The underlying mechanism for this can be understood on a neurophysiological level.

When information is rehearsed on several occasions over a period of time, neural networks grow new synapses that help to reduce the effort needed to recall the learned information (Knoblauch, 2009). However, when this same information is rehearsed only once in a longer duration, the growth of new synapses is only slightly more than if the information had been taught for a shorter duration in line with spaced repetition (Knoblauch, 2009). For example, if Learner A studies for 10 minutes three times this week, and Learner B studies for 30 minutes once, the number of new synapses increases by the same amount in both learners (Knoblauch, 2009). Therefore, it can be argued that repeated exposure to a task or information can have similar benefits as prolonged single exposure, at least on a neurophysiological level.

How can teachers use the spacing effect to our advantage in a classroom setting, where time is limited and expected goals are standardized to a systematic scale? As previously

mentioned, the spacing effect has been used for very specific applications such as language learning apps, but can be adapted to better suit more experiential subjects, like music or science. It seems that spacing can be used in most cases in which students are learning new material. Learning of songs can be enhanced by temporally spacing practice sessions, which has been shown to improve working memory and increase retention of the words in the songs themselves when compared to a singular mass practice (Carpenter et al., 2022). Most interestingly is that the duration of breaks between practice seems to have little effect on the degree to which the songs are learned, up to a reasonable point (Katz et al., 2021). So, in the context of music, breaking the song into manageable blocks and spacing out the practice of such blocks instead of whole song practice can potentially have a comparatively advantageous effect on the retention of the song in its entirety.

But what about subjects that often rely on more hands-on learning, such as science? In the ever-shrinking windows of time in which most educators have to teach any given lesson, experiential learning may need to be replaced with more time-efficient but less stimulating activities. One way to combat the cognitive load placed on students who are being increasingly exposed to more information with less time to understand and recall this information is by using a simple technique referred to as microlearning (Yuan, 2022).

Micro-learning can be described as breaking the time spent learning into smaller chunks, allowing time for small breaks such as quick exercise activities or alternative learning experiences; anything to create a break in the streamline of the learning structure for a short while (Yuan, 2022). This differs from chunking in that chunking refers to the breaking of information, while micro-learning refers to breaking up the time (Yuan, 2022). This has the benefit of redirecting attention into other areas of the brain for a brief moment, simulating the

practice of a longer period of time being spent between studying. In this way, multiple periods of study can take place within a shorter period of time while still benefitting from the spacing effect on a neurological level.

### ***Retrieval Practices***

Agarwal et al. (2014) described retrieval practices as having students recall information from their memories rather than rereading information. This process of learning helps students to actively engage with material through recall, and students deepen their understanding and improve their ability to retain and apply knowledge over time. Students also can gain insights into where they have gaps in their knowledge.

Looking at the common, yet misunderstood application of retrieval practice, there are several strategies that can be applied, most notably practice testing (Agarwal et al., 2014). Practice testing is simply providing students with an opportunity to review material in the format of a traditional test, but without the implications such as test scores that average into the student's final grade. Practice testing has the benefit of reducing anxiety, which is a stressor ever more prevalent in schools today (Agarwal et al., 2014). Stress, as mentioned previously, subjectively raises cognitive load, so a reduction in anxiety could have potentially significant impacts on the level of cognitive load on an individual (Carpenter et al., 2022). Considering the impact practice testing has on reducing stress levels, it follows that by introducing practice tests that more closely mimic the real tests instead of worksheets that may have different formats or structure, a teacher can passively reduce the cognitive load in the classroom (Agarwal et al., 2014).

But why does practice testing have such an impactful influence on a learner's ability to recall information? The answer lies in efficiency; a learner becomes more efficient at answering

questions if the topic and format of testing is familiar to them (Rawson & Dunlosky, 2012). However, without support from teachers or peers, learners often assume that practice testing is meant more so for monitoring of success rather than as a vehicle for improving recall of information (Rivers, 2021). Because of this challenge, further implementation of other tools for improving germane load may also be necessary.

### ***Learning-by-Teaching***

Learning-by-teaching is an effective strategy for helping to ensure that the combined experience of everyone involved can be fully utilized, which saves time of course, but from a cognitive point of view, this effect has another bonus. It is well known that teaching others has the added advantage of increasing one's own retention of information (Carpenter et al., 2022). The cause of this seems to be mainly rooted in psychology. According to Frankenstein et al. (2022), self-efficacy plays a role in the ability of learners to recall information, and by believing one has the knowledge necessary to teach others, an individual is more capable of showcasing this knowledge in assessment or practice. This facet of self-efficacy is in line with other studies suggesting that learning by teaching creates an environment whereby more inspired questions are asked, facilitating learning (Wong et al., 2023). Therefore, learning-by-teaching has numerous benefits ranging from increased self-efficacy to enhanced creativity.

So why do collaborative learning techniques such as learning-by-teaching have such a powerful influence on memory and cognition? The answer lies somewhere in the brain's preference to organize information and consolidate it into networks that are more readily retrievable (Larsen, 2018). This can likely occur as a result of the learner's understanding that recall of this information is imminent, therefore consolidation is necessary for the accurate expression of such information to others. This probably stems from a desire to be acknowledged

by peers. If the information a student provides is inaccurate, then credibility may be harmed. Essentially, it is the brain's social survival need that brings about this consolidation of learning content.

In practice, having a multitude of students in one classroom simultaneously teaching each other is a challenge that can be overcome by several methods, notably the jigsaw method, which divides the class into an appropriate number of groups focusing on one topic each that then go on to teach each other (Samangun et al., 2024). This strategy, along with other role-playing techniques, has been shown to improve scores across a wide range of subjects, including language acquisition and forensic science (Kumar et al., 2024). This style of learning-by-teaching is both time-efficient and effective for utilizing the self-regulation of the learners.

Educators must address the problem stated previously that there often is not enough time for an entire classroom to learn by teaching. Teachers can help with time issues with note-taking under a certain pretense. An instructor can get the most out of a simple lecture in which students are expected to take notes by stating that the notes being taken will be used to teach others. This method of "silent teaching" is an effective strategy for minimizing the problem of having so many students verbally teaching their learned content within a classroom (Lim et al., 2021). Silent teaching basically provides the benefits of learning-by-teaching without the subsequent teaching aspect, thereby saving time.

While teachers may be associating learning-by-teaching with students literally instructing their peers in the manner that a teacher might, students can take notes and create their plan for teaching. This teaching script is potentially almost as valuable as actually teaching other students. As students are learning, they take notes and create a teaching script or plan. After teacher-led instruction has finished, accountability measures can take place, such as randomly

selecting a student to share their script, or having all students swap scripts with their peers. In this way, students are more likely to feel motivated to provide accurate information with the added benefit of both consolidating thoughts and possibly asking more creative questions within their scripts.

### **Summary**

The practical applicability of reducing cognitive load in an effort to improve the learning experience of school-age students is one that receives a lot of attention, but rarely have there been systematic reviews encompassing such an extensive set of generally useful teaching methods. The information shared within this review has been researched extensively and, while not all of these techniques can be utilized at the same time, one or a mix of the most necessary measures can be included in any traditional classroom environment without being too far removed from what is commonly accepted as universally appropriate pedagogical teaching. For example, if one were to try to implement all the methods mentioned within this review, it might look something like this:

- A teacher can use the CHOP technique to break down the information into parts and order them in a way that takes less effort to remember (Syn & Batra, 2013).
- Pre-teaching some of the material under the established direction of a flipped classroom can reduce the switch cost often accompanied by switching between tasks frequently in a lesson (Etemadfar et al., 2020).
- Having the students write their own teaching scripts instead of notes can further enable learners to consolidate information more efficiently (Lim et al., 2021).
- Through instructor-led application activities whereby the instructor gradually removes themselves from the activity, teachers can get a better sense of student

understanding through what is essentially relationship-building (Gonzalez-Calero et al., 2015).

- Appropriately spacing out the learning material, whether it be several days or even micro-learning within the span of a single lesson can increase retention rate through synaptic growth (Knoblauch, 2009; Yuan, 2022).

The techniques stated in this review can ultimately help students and teachers manage cognitive load and effectively assist learners in “freeing up space and effort” in their own minds.

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## **Peer Observation: Inspiring Collegial Collaboration and Self-Reflection**

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### **Abstract**

Schools are dynamic environments in which the needs of students and educators are constantly shifting. As such, it is the responsibility of school organizations to foster collaborative learning environments that encourage self-reflective practice. Peer observation is a valuable approach to professional development that allows for continuous learning among educators. Through peer observation in structured teacher triad teams, educators are encouraged to set meaningful goals, trial new strategies, receive feedback from their peers, and reflect on the implementation of new practices. In this study, a peer observation framework, which highlighted the teacher triad approach to peer observation, was found to be successful in a sample middle school. With clear vision and intentional use of time, the peer observation process inspired collegial collaboration and self-reflection among educators. Supporting educator professional growth in this way is essential for the success of our schools. Through purposeful, continuous professional learning, educator efficacy is enhanced, and thus student learning is positively influenced.

*Keywords:* peer observation, collegial collaboration, professional development, self-reflection, continuous learning

It is the very nature of education to be in a constant state of change, and educators must continuously reflect upon the effectiveness of their practices. Whitehurst (2024) explained, “The

landscape of K–12 education is ever-evolving, shaped by advances in technology, changes in societal expectations, and continuous efforts to provide the best educational experience for students” (para. 1). With varying demographics among students, educators must design experiences that address a wide variety of learning needs. For this reason, it is important for educators to be reflective of their practice and open to trying new methodologies.

Peer observation is a powerful tool that enhances professional learning by providing continuous opportunities for goal-setting, practice with new strategies, feedback, and reflection (Faddis et al., 2022). By focusing on practices that promote student learning and are relevant to teacher growth, educators can help one another develop the skills necessary for meeting student needs (Rouleau, 2019). An essential component of peer observation, the ongoing dialogue among fellow educators, is crucial for fostering a high-trust, collegial culture centered around learning. (Caskey & Carpenter, 2020; Griesinger, 2023).

Continuous learning through peer observation is not without challenge. School days are often full and busy times for educators. Between teaching classes, attending meetings, assessing student learning, and preparing for future lessons, teachers may perceive there is little time left to prioritize engaging in meaningful reflection and dialogue with fellow educators. Time is, therefore, one of the major barriers to collegial collaboration and the peer observation process (Jarvis et al., 2017; Rouleau, 2019). In addition, asking teachers to reflect on their own practices requires a certain level of trust.

It is the collective responsibility of both administrators and educators to engage in opportunities that cultivate high-trust environments (Tschannen-Moran, 2020). Designing a framework to support collegial collaboration and educator self-reflection will require more than just allocating time in the schedule. Purposeful collaboration through the peer observation

process is vital for inspiring collegial interactions, which are essential for supporting educator professional growth and the overall success of our schools (Caskey & Carpenter, 2020; Crawford, 2022; Education World, 2019; Nordgren et al., 2021).

To support their adult learners, school administrators must collaborate with their educators toward a shared vision. As Shah (2012) shared, “Teacher collegiality could modify instruction, therefore teachers (and administrators) need to recognize the value of working together” (p. 1243). By addressing inconsistencies among opportunities for nonevaluative, formative observation and reflection of educator practices, schools can foster a collegially collaborative culture. Through continuous, collaborative interactions where goal-setting, feedback, and self-reflection are the basis, educators can become more aware of the impact of their practices on student learning, thus supporting their own professional growth (Faddis et. al., 2022; Rodman, 2023).

## **Literature Review**

### **Teachers as Learners**

With the ever-changing landscape of education, educator professional learning must be a priority for schools (University of San Diego, 2022). The inundation of rapidly advancing technologies and constantly evolving needs of student learners requires educators to adapt (Whitehurst, 2024). To support professional growth and educator efficacy, schools should foster a positive learning environment for not only their students but also their teachers.

Learning environments that aim to meet the needs of the adult learner are essential. Schools often focus more on student learning needs, overlooking the needs of their adult learners (Rodman, 2023). Educators, like students, thrive with guidance along their learning journeys. An educator's ability to rapidly adapt in response to change and to be open to embracing new ideas is

variable, at times hindering administrator efforts to support adult learners (University of San Diego, 2022). For this reason, carefully designing opportunities that foster trust and encourage vulnerability are vital (Coyle, 2019). School leaders must have a clear vision and be truly invested to encourage and support adult learning in their organization (Rodman, 2023).

Quality professional development can have a positive impact, promoting a growth mindset among educators and enhancing student learning (University of San Diego, 2022). From large-scale professional development days to small-scale team meetings, there are a variety of ways to support educators. Though these opportunities may be embedded in school calendars, their effectiveness is dependent upon several factors. Professional learning experiences are successful when they focus on teaching skills, develop subject matter expertise, offer strategies for overcoming classroom challenges, encourage collaboration, provide choice, address technology needs, are simple and specific, are ongoing, create opportunities for feedback and discussion, and allow time for practice with new strategies in the classroom (University of San Diego, 2022). These considerations are important for administrators as they embark upon the challenge of designing meaningful learning opportunities for their educators. Based on my research, I believe if the aim of schools is to empower their students as learners, then schools should also empower their teachers as learners.

There are five practices that can help educators grow professionally: attunement, alignment, perspective, collective efficacy, and organizational learning (Rodman, 2023). For schools to continue learning and growing, educators must first understand who they are as learners before they can align with their organizational goals. Administrators and teachers alike must also consider others' perspectives, recognizing and accepting the differences between members of their school organization. By understanding the needs of adult learners and

considering the practices that can support educator growth, the collegial landscape of a school's culture can be developed.

### **Collegial Collaboration**

Throughout the literature, it was evident that collegial collaboration is necessary to support educator professional growth (Codrington, 2022; Kaneft, 2022). Collegiality is about more than congenial interaction among colleagues. Though congenial schools may be pleasant workplaces, this type of culture may not necessarily promote organizational growth (Kaneft, 2022). Typically, congenial cultures emphasize individual comforts which can detract from the importance of the school as a community. When there is a need for organizational change in congenial environments, there is often discussion about educator buy-in which places emphasis on individual educators rather than the organization (Kaneft, 2022). In a collegial culture, individual and school needs are woven together, supporting educator and administrator collaboration toward a shared vision (Codrington, 2022). Disagreements and respectful debates occur in these environments and promote organizational growth (Codrington, 2022). If administrators aim to lead their staff beyond what is comfortable, and supersede the status-quo, they must foster collegial interactions (Kaneft, 2022). As such, the success of the school as a collegial community depends upon the candor of its administrators and educators (Kaneft, 2022).

### **Models to Support Collegial Collaboration**

There are a variety of organizational models that support teacher collaboration including common planning time (Caskey & Carpenter, 2020; Education World, 2019), professional learning communities (Caskey & Carpenter, 2020; Education World, 2019), critical friends groups (Caskey & Carpenter, 2020; Education World, 2019), teacher learning walks (Education World, 2019; Fisher & Frey, 2014), teacher learning labs (Miller, 2023), and peer observation

(Crawford, 2022; Education World, 2019; Jarvis et al., 2017). Each model strives to support teacher learning, increase collegiality, and provide more awareness and insight of instructional practice relative to student learning (Caskey & Carpenter, 2020).

Common planning time (Caskey & Carpenter, 2020, Education World, 2019) is one method for inspiring collegial collaboration. Allocating time in the schedule for groups of educators to collaborate as they plan their lessons is an important step toward supporting collegial interaction. Though this simple schedule design may have good intentions, there are some barriers to supporting collegial collaboration in this way (Nordgren et al., 2021).

In one study conducted in Sweden, researchers analyzed teacher planning and preparation in order to understand the impact of collegial collaboration on educator perceptions of conditions for lesson planning (Nordgren et al., 2021). Both qualitative and quantitative data were used to analyze the implementation of and outcomes associated with planning and preparation. The results indicated that most teachers involved in the study experienced inadequate infrastructure when there was ineffective use of time for planning and preparation.

This study concluded that when there was more intentional collegial work, teachers were more satisfied with the amount of time available (Nordgren et al., 2021). Additionally, teachers with more time scheduled for reflection were better able to enact and evaluate instructional practices (Nordgren et al., 2021). In environments that promoted open, reflective dialogue and provided a structure supporting collaboration, both educator and student learning were enhanced.

Learning walks (Education World, 2019; Fisher & Frey, 2014) are another approach to positively influencing collegial collaboration. This nonevaluative, low-stakes process can be beneficial for schools aiming to support educator reflection on their own learning (Fisher & Frey, 2014). There are three different strategies to implement learning walks. Each opportunity

requires some formal structure so the process is beneficial. With a lack of guidance in approach to learning walks, some schools have found the initiative to be unsuccessful (Fisher & Frey, 2014).

Ghost walks are considered the low-level entry into learning walks where educators are encouraged to visit other educator classrooms when there are no students present (Fisher & Frey, 2014). Two other types of learning walks include capacity-building learning walks and faculty learning walks. In each of these experiences, observations are occurring in classrooms where educators are teaching. The capacity-building approach focuses on data collection of the implementation of particular teaching strategies whereas faculty learning walks are more flexible. Faculty learning walks can be designed to focus on particular data or can be more open-ended. Regardless of approach, it is of great importance to conclude learning walk opportunities with whole group reflection led by the facilitator of the process.

An alternative approach to teacher professional development is the creation of a teacher learning lab (Miller, 2023). This strategy, implemented by a school in Connecticut, is designed to support continuous professional growth. Typically, school districts use intermittent, often sporadic professional development days embedded within a school year. These disjointed learning moments can prohibit the establishment of a culture of continuous learning and growth. With the learning lab design, educators have both a physical and vulnerable space that fosters supportive, trusting relationships where teachers can experiment with new strategies. In this space, educators can collaborate with colleagues and work with volunteer students to model new teaching ideas. Then, educators can reflect on and dialogue about the processes tested and bring new strategies back to the classroom.

This design of continuous learning can provide comfort for educators and encourage their vulnerability (Miller, 2023). In Miller's (2023) study, educators were more inclined to take risks in the learning lab environment. Not only did the school promote a culture of learning among their staff, but also among their students who often volunteered to participate in the learning labs. Inevitably, the culture of learning trickled down to the students and inspired them to be more engaged in their school community (Miller, 2023).

Peer observation is another means for promoting professional growth. Teachers observing one another is invaluable, supporting on-going collegial interactions and continuous learning (Education World, 2019). At the University of Porto, researchers sought to determine how the results of a peer observation framework influenced educator practice (Torres et al., 2017). Observations occurred both within and across content areas, allowing colleagues to observe a variety of peers. During observations, participants recorded notes which were later analyzed to look for trends in the teaching practices that were most impactful. These observations were categorized into teacher's attitude, class climate, class structure, and class organization. Researchers determined observations across all fields mainly focused on aspects that allowed for better teacher-student interaction and fostered student engagement.

In addition to this conclusion, researchers determined there were different benefits for educators when observing peers across and within content areas. Though observations of similar content peers offered insightful reflection about specific teaching practices, educators also found benefit when observing peers outside of their content (Torres et al., 2017). Cross-curricular observations shifted the focus toward pedagogical needs, thus inspiring reflection around broader instructional goals (Torres et al., 2017). In the end, Torres et al. (2017) recommended peer observation programs as "enhancer devices" (p. 836) for teaching practices.

Though each of these strategies provides infrastructure in support of collegial collaboration, their design and implementation must meet the needs of adult learners for them to be successful. There must be some level of autonomy, choice, and relevance to the specific needs of the educator (Rodman, 2023). Of greatest priority, professional learning must be ongoing and create the opportunity for critical reflection (Crawford, 2022).

### **Peer Observation: A Closer Look at the Teacher Triad Model**

In an article published in the *Australian Journal of Teacher Education*, Crawford (2022) analyzed the impact of critical reflection and collegial peer observation on educator efficacy. To begin, a history of reflective thinking processes was recounted as educational pedagogy evolved through the years. Among the educational theorists studied, a common theme emerged, showing “learning takes place as a result of purposeful interaction and modification of practice” (Crawford, 2022, p. 55). According to this study, there are two ways to engage in critical reflection: gaining new knowledge and reviewing current practices. Through careful consideration of practice, this “problem finding and solving” (Crawford, 2022, p. 56) approach is beneficial.

Through their study, Crawford (2022) showcased the benefits of critical reflection on teaching and suggested the use of teacher triad teams as a peer observation strategy for carrying out action research at the classroom level. In this model, there are two observers and an action research leader. They work through a spiraling process of research and reflection of current practice, planning for modification of practice, trying the new strategy, and observing its implementation. Then, the cycle repeats itself beginning with new reflection of practice. This triad model provided for ongoing collegial collaboration among educators.

Another vision of teacher triad teams is showcased by researchers at McREL International (Jarvis et al., 2017). Through analysis of the use of teacher triad teams for peer observation, researchers highlighted the importance of using a strengths-based approach to self-reflection as prior research show a deficit-based approach does not work (Jarvis et al., 2017). Similar to positive reinforcement strategies in the classroom, encouraging educators to reflect upon and set goals around what is going well can positively impact the mindset around professional learning (Moore, 2019).

According to McREL researchers, there are four major aspects of professional learning opportunities necessary for the transfer of learning into classroom practice (Jarvis et al., 2017). First, there must be meaning behind new strategies; second, demonstrations of these new strategies must occur. Third, educators go on to practice in their own classrooms, and fourth, teachers must follow up with fellow educators through peer coaching interactions. The consistent use of each of these components led to meaningful professional learning.

The triad model proposed in this article is consistent with most peer coaching models, incorporating three roles: the coach, the coachee, and the observer (Jarvis et al., 2017; Rouleau, 2019). For peer coaching to be successful, certain key elements are necessary: (a) defining the purpose behind the peer-coaching, (b) identifying the roles of the participants, and (c) understanding how to provide feedback (Rouleau, 2019). To support peer coaching infrastructure, there must also be dedicated time and space for the triad group to interact (Jarvis et al., 2017; Rouleau, 2019). In addition, aligning the peer coaching experience with individual needs is essential (Jarvis et al., 2017). Research and data to guide informed decision-making around classroom practice is an important support for successful peer coaching. Through the triad model, schools can extend educator practices and connect individual educator goals with

whole school goals. In the end, peer coaching builds capacity for professional learning and educator growth (Fullan, 2016; Jarvis et al., 2017).

By nature of design, teacher triad teams embrace the teaching sprints process in which educators create research-based goals, trial new strategies, and reflect on their impact on student learning (Breakspear & Jones, 2020). The teaching sprints approach promotes continuous professional learning and is intended to encourage overwhelmed educators with their professional growth. Through this process, collaboration occurs among a small group of educators beginning with the determination of an area of focus. This is followed by dialogue among the members which is based upon current, related research. With background knowledge, educators are better able to make informed decisions about how to address challenges they may face in their classrooms. After brainstorming and goal-setting, educators engage in a sprint in which they trial a new idea in their classroom. Posttrial, teachers then reflect on their practice.

To promote the feeling of safety, which is a necessary support of the peer observation process, the teaching sprint approach can assist educators with identifying goals, building knowledge, and allowing for the safe practice of new instructional strategies (Breakspear & Jones, 2020; Faddis et al., 2022). Reflective dialogue inspired by the teaching sprints process is essential for extending professional learning and is naturally built into the teacher triad model of peer observation. Regardless of the nuances specific to the approach to teacher triad teams, peer observation has the most impact on educator professional growth (Breakspear & Jones, 2020).

### **Summary**

The literature reviewed in this document focused on the needs of adult learners, the importance of collegial collaboration, and suggestions for successful models of peer observation. Like their students, educators have learning needs that must be met (Rodman, 2023). To promote

growth, professional learning opportunities must be designed with the adult learner in mind (Rodman, 2023). There are a number of examples of professional learning opportunities that foster collegial collaboration among educators. Peer observation is one avenue for inspiring collegial interaction and self-reflection which can have a positive impact on the school learning environment (Crawford, 2022; Jarvis et al., 2017; Miller, 2023; Nordgren et al., 2021; Torres et al., 2017). Through the review, evidence in support of using peer observation as a means for professional learning was abundant (Crawford, 2022; Jarvis et al., 2017; Nordgren et al., 2021).

Many of the professional learning strategies highlighted throughout the literature focused on the benefits of collegial collaboration in schools (Crawford, 2022; Jarvis et al., 2017; Miller, 2023; Nordgren et al., 2021; Torres et al., 2017). There are numerous advantages to collegial collaboration among educators. These include providing assistance and support to new educators, helping teachers respond effectively to change, establishing a positive sense of self-efficacy, and creating a climate that values risk-taking and continuous improvement (Shah, 2012). Though there was some discussion around barriers to supporting collegial interactions, more research is needed to help problem-solve these challenges. One of the barriers that stood out in the literature is the barrier of time (Jarvis et al., 2017; Rouleau, 2019). School schedules are busy and at times inflexible, which can make it challenging to support peer observation. Another highlighted barrier was the need to shift a school culture (Codrington, 2022; Kanef, 2022, Miller, 2023). Cultural shifts do not happen overnight and with sometimes frequent changes in administration or teachers, establishing a culture that embraces vulnerability can be challenging.

To establish a collegial environment administrators must create a culture of trust (Coyle, 2019). By encouraging vulnerability, educators are more apt to take risks and trial new ideas

without fear of failure (Coyle, 2019; Miller, 2023). This mindset promotes professional learning and educator growth. Through the adoption of a teacher triad model for peer observations, schools are better able to support continuous, collaborative interactions that embrace goal-setting, feedback, and reflection. By tapping into adult learning theories and designing professional learning opportunities that meet the needs of adult learners, schools can inspire collegial collaboration and deepen their collective learning.

Middle schools are prime environments for educator collaboration due to their general organizational model, which includes designated common planning time and professional learning communities (Caskey & Carpenter, 2020). In addition, meaningful educator interactions are also supported through professional development days (Griesinger, 2023). Though each of these opportunities is designed to encourage frequent educator interactions, how schools go about using this time is crucial to supporting the adult learner (Rodman, 2023) and promoting collegiality (Kaneft, 2022). With the goal of increasing peer observation, recognizing fellow educators as important resources for professional learning and growth, middle schools can support their teachers through the design and implementation of a peer-observation framework. Through these means, collegial collaboration and self-reflection can become central to continuous professional learning.

### **Research Plan**

The specific goal of this research was to determine what educators perceive as important factors supporting collegial collaboration and the impact of peer observation on perceptions of collegial collaboration. The following research questions guided the research:

1. What are the important elements of collegial collaboration, and what is needed to support educator collegiality and self-reflection?

2. What are the effects of a peer observation process on educator perceptions of collegial collaboration?

Both quantitative and qualitative data were collected at a sample middle school comprising approximately 80 educators and 700 students. I administered an educator survey (see Appendix A) regarding collegial collaboration, self-reflection, and peer observation. In addition to the survey, data collection occurred through both observation (see Appendix B) and focus group interviews (see Appendix C). These data points were used to better understand educator perceptions around collegiality, self-reflection, and peer observation.

After this data collection and analysis, a pilot group study occurred in which a group of teachers experimented with a triad model peer observation approach. This process provided guidance for participants, designating already allocated time in the schedule for premeeting, observation, and debrief. Through focus group interviews, reflection and feedback on the process were recorded. The pilot group feedback aligned with both the survey data and interview data as participants confirmed the challenge of time as the biggest factor when engaging in peer observation. In addition, pilot group data reinforced the need for built-in accountability to support the process.

### **Research Phases**

The research was carried out through three phases of data collection and analysis. In Phase 1, meaning was established in support of a peer observation framework. In Phase 2, a framework to guide peer observation was designed, and in Phase 3, the framework was trialed.

#### ***Phase 1: Building Meaning***

A mixed-method approach to data collection (Creswell & Guetterman, 2019) allowed for both quantitative and qualitative analysis of collegial collaboration, self-reflective practice, and

the peer observation process. The sampling method included a school-wide educator survey (see Appendix A) in which representatives from each grade-level and content area provided feedback relative to perceptions of collegiality, self-reflection, and peer observation. The survey provided large-scale, whole-school feedback in which 33 middle school educators, representing 42% of the staff, participated. There was a mix of male and female teachers. Quantitative analysis was then used to generalize educator perceptions and feedback. In addition, qualitative analysis of open response survey questions occurred. Responses were analyzed for high frequency word use from respondents, such as references to the factors of time and trust. Qualitative data, encompassing representatives from each grade-level and content area, were recorded via observation notes (see Appendix B), focus group interview responses (see Appendix C), and administrator interview responses (see Appendix D).

### ***Phase 2: Designing a Framework***

Through a review of the literature, ideas for supporting adult learners and designing peer observation frameworks were explored. Using this information along with data analysis from the educator survey, focus group interviews, and administrator interviews, a framework to support the peer observation process was designed. This included partnering volunteer educators in teacher triad teams, the explicit use of faculty meetings for pre-observation dialogue, scheduled observation time, and the use of PLC meeting time for debrief and reflection. A pre-observation template (see Appendix E), observation notes template (see Appendix F), and post-observation dialogue guidelines (see Appendix G) were used to support educators through the process.

### ***Phase 3: Peer Observation Trial***

In conjunction with teachers, I created two teacher triad teams with representatives from each grade level and within the same content area. Teacher triad groups were introduced to the

new framework in advance of the pre-observation encounter. These groups were provided guidance for recording objective observations and providing specific, meaningful feedback (Anderson, 2024). Teacher triad members collaborated to determine the day and time of the observation based upon the master schedule, carried out a round of observation, and reflected on the experience. Qualitative data, gathered through pilot group post-assessment questions, was collected posttrial (see Appendix H). This trial data was then used in triangulation with prior survey data and interview data to create recommendations for a school-wide peer observation framework.

### **Results**

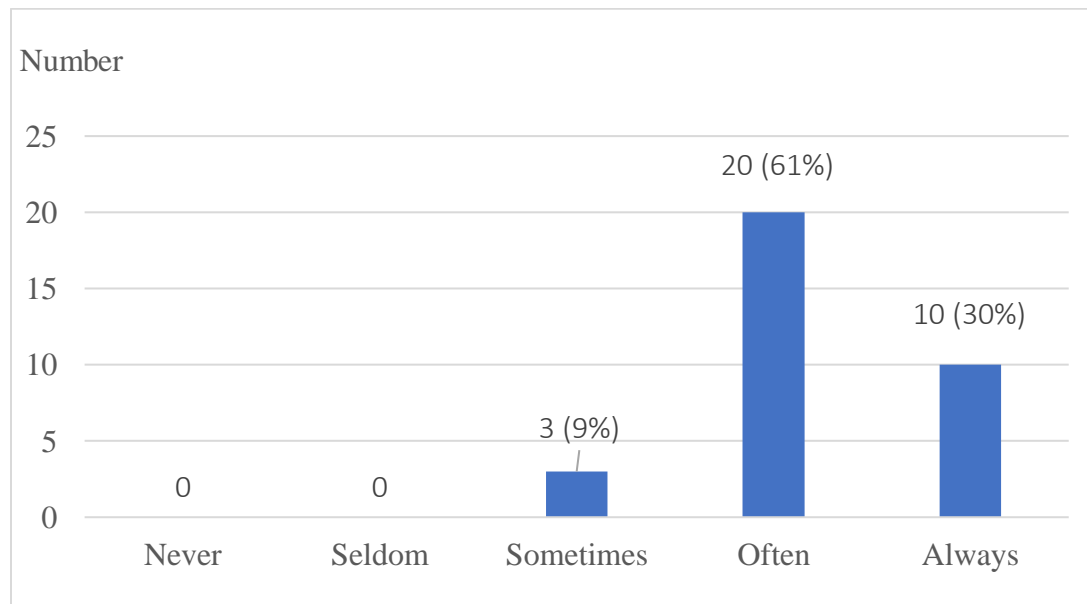
The majority (68%) of the 33 survey respondents considered their interactions with colleagues as often or always collegial, and the most common factors associated with educator collegiality included trust, open-mindedness, shared-vision, and flexibility. Most educators (97%) reported they frequently or always reflect on their instructional practices with the majority (73%) reflecting frequently or always through dialogue with peers. The data also highlighted overlapping themes between the supports needed and barriers to the peer observation process. Dedicated time to the processes of peer observation and collegial collaboration was mentioned the most (65% of short response answers) throughout the data. In addition to the time barrier, providing some level of accountability for educator engagement was another common response from educators (22% of short response answers). This could look like embedding expectations in a schedule, providing prompts to encourage these interactions, and shared vision reinforced by school leaders.

### Collegial Collaboration

Pre-study perceptions of educator collegiality are displayed in Figure 1. Thirty of the 33 participants (91%) rated their interactions with fellow educators as 4 or 5 showing the vast majority of educators perceived their interactions as often or always collegial in nature. The other three participants (9%) rated their interactions as sometimes collegial. No participants rated collegial interactions as occurring rarely or never.

**Figure 1**

*Frequency of Collegial Interaction with Fellow Educators*



The degree to which educators found opportunities for collegial collaboration favorable for supporting their own professional growth are highlighted in Table 1. The most beneficial opportunities for supporting professional learning and growth included: (a) 73% (24) of participants rated peer observation as often or always beneficial; (b) 76% (25) rated content meetings as often or always beneficial; (c) 91% (30) participants rated informal conversations as often or always beneficial. The least beneficial opportunities included: (a) professional

development sessions in which 88% (29) participants rated PD as sometimes or rarely beneficial; (b) 82% (27) of participants rated after-school monthly PLC meetings as sometimes or rarely beneficial; (c) 78% (26) of participants rated nonevaluative observations from curriculum leaders as sometimes or rarely beneficial.

**Table 1***Benefit of Collegial Collaboration Opportunities*

	Number of Survey Respondents			
	Rarely Beneficial n (%)	Sometimes Beneficial n (%)	Often Beneficial n (%)	Always Beneficial n (%)
Peer Observation (nonevaluative)	1 (3%)	8 (24%)	11 (34%)	13 (39%)
Informal Conversations	0	4 (12%)	18 (54%)	11 (34%)
Content Meetings	2 (6%)	6 (18%)	17 (52%)	8 (24%)
Team Meetings	2 (6%)	12 (36%)	13 (39%)	6 (18%)
Evaluator Observations	4 (12%)	18 (54%)	9 (27%)	2 (6%)
Curriculum Leader Observations (nonevaluative)	11 (34%)	15 (45%)	6 (18%)	1 (3%)
PLC Meetings	9 (27%)	18 (54%)	6 (18%)	0
Professional Development Sessions	6 (18%)	23 (70%)	4 (12%)	0

Through analysis of the short open-response survey questions, high frequency words were used to determine key factors in support of collegial collaboration. According to educators, these factors included: time at 67% (22) of respondents; open-mindset at 52% (17) of respondents; trust at 21% (7) of respondents; and shared vision at 21% (7) of respondents. These

factors also showed up as barriers to collegial collaboration when they were not positively and regularly in place.

In addition to educator perceptions of collegial collaboration, administrator interviews provided another perspective on the nature of collegiality and the opportunity for engaging in such interactions. All administrators interviewed remarked about the high collegiality witnessed among content teams and grade-level teams. One administrator shared that during team meetings it is clear educators in these groups “get along well as they often engage in professional and respectful interactions, even in times of disagreement.” In addition, administrators spoke of the importance of fostering high-trust environments to support these interactions. One administrator remarked, “While there are various means for collaboration, a high-trust environment is necessary for welcoming informal critique.” When asked about what is required to encourage peer observation, both tangibility and accountability were highlighted as necessary supports. One administrator stated, “If we feel peer observation is beneficial, then we need to hold each other accountable.”

### **Self-Reflective Practice**

Table 2 data indicates that 79% (26) of participating educators were comfortable or extremely comfortable with receiving nonevaluative feedback from their peers, while 21% (7) of teachers reported feeling neutral or somewhat uncomfortable with this concept. Thus, 26 of the 33 teacher participants were comfortable with nonevaluative feedback.

**Table 2***Teacher Comfort with Nonevaluative Feedback*

Categories	Never n (%)	Seldom n (%)	Sometimes n (%)	Frequently n (%)	Always n (%)
Score	0 (0%)	1 (3%)	6 (18%)	10 (30%)	16 (49%)

In subsequent survey questions, educators were asked to rate their use of feedback and their engagement in self-reflective processes. For these questions, 63% (21) of staff reported feedback frequently or always influenced their classroom instruction. Interestingly, 97% (32) shared they frequently (21%) or always (76%) reflect on their instructional practices. Teachers self-reported that of this high-level of reflection, 55% (18) of staff reported frequently reflecting through dialogue, while 18% (6) of staff reported they always engage in reflective practice through dialogue with their peers (see Table 3).

**Table 3***Self-Reflective Practice*

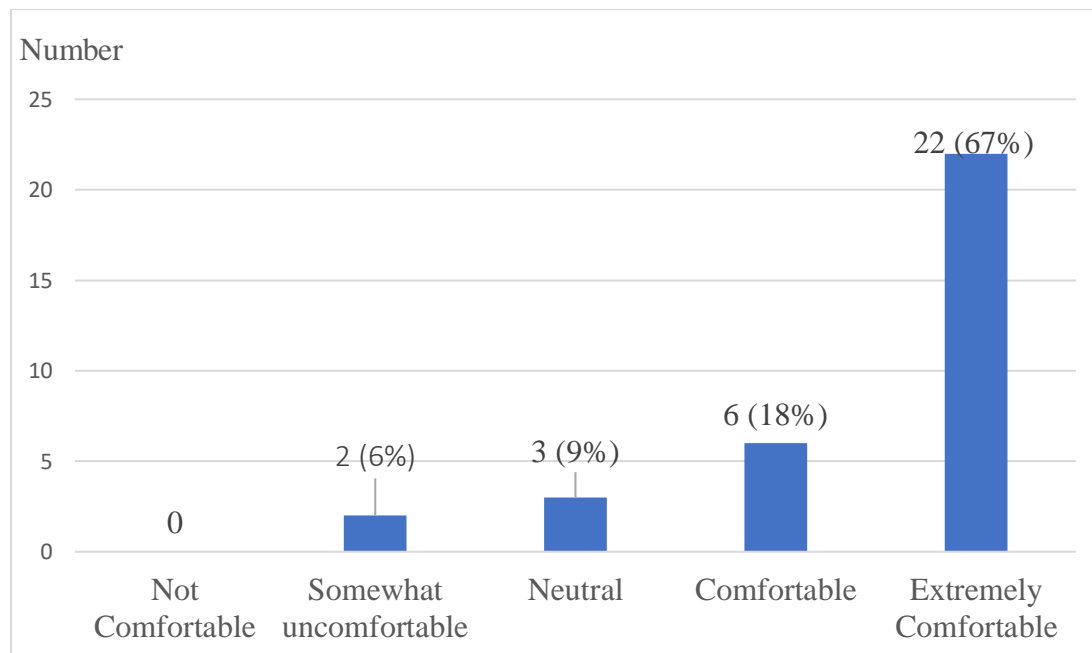
Categories	Never n (%)	Seldom n (%)	Sometimes n (%)	Frequently n (%)	Always n (%)
Influence of feedback on classroom instruction	0	3 (9%)	9 (27%)	14 (42%)	7 (21%)
Frequency of reflection on instructional practices	0	0	1 (3%)	7 (21%)	25 (76%)
Frequency that reflection involves dialogue with a peer	0	1 (3%)	8 (24%)	18 (55%)	6 (18%)

## Peer Observation

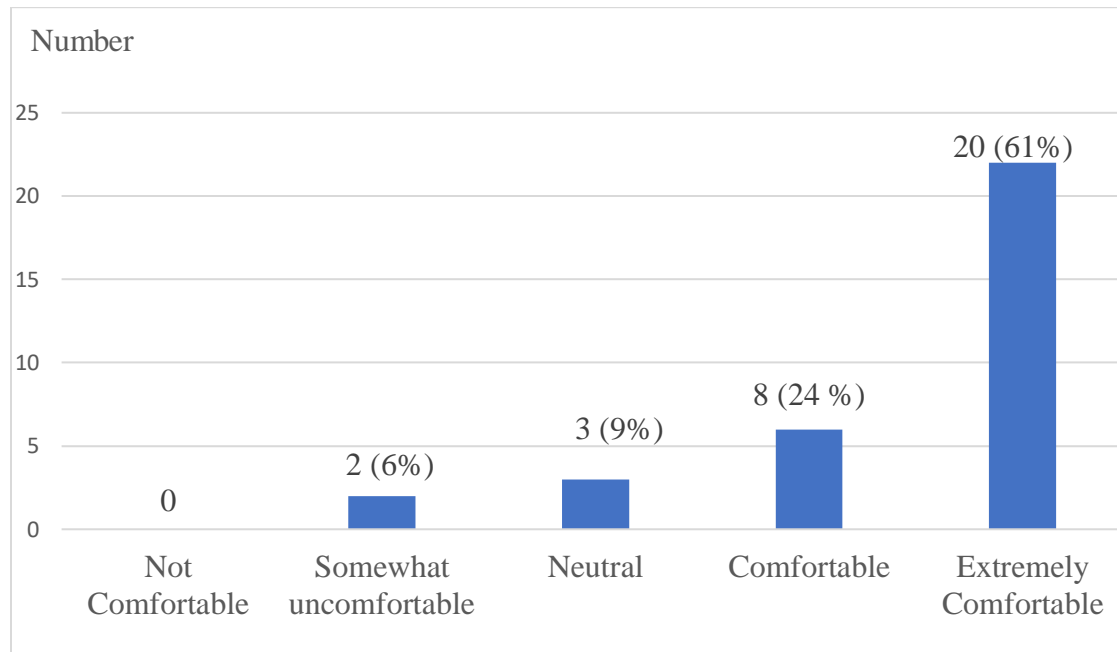
When asked about comfort with observing peers, 28 of the 33 respondents (85%) expressed they were comfortable or very comfortable with observing their peers (see Figure 2). The results also indicated three teachers were neutral, but two participants were somewhat uncomfortable observing their peers.

**Figure 2**

### *Comfort Observing Peers*



In terms of having their peers observe them, the overall numbers were the same with 85% (28) of the 33 respondents expressing they were comfortable or very comfortable, three teachers were neutral, and two teachers were somewhat uncomfortable being observed by their peers. Three teachers moved their ratings from very comfortable to comfortable from observing their peers to being observed by their peers (see Figure 3).

**Figure 3***Comfort Being Observed by Peers*

Educators reflected on the frequency of their peer observations over the course of the school year and the data varied, with some educators that had visited multiple classrooms while others had visited none. For this survey question, 18 (55%) of participants indicated they had made 3 or 4 observations during the year. Three participants (9%) had made two observations. Six participants (18%) had made one observation, and the final six (18%) participants had made no observations during the school year. Thus, 27 (82%) of participants made at least one observation and 21 (64%) of the participants in this study had made at least two observations during the year.

Qualitative data results from educator focus group interviews (see Appendix C) and administrator interviews (see Appendix D) brought about important explanations relative to the success of a peer observation program (see Table 4). A review of the data from these interviews

helped me to gain more insights into two important topics for this study: (a) barriers to peer observation and (b) support for peer observation. It is no surprise these barriers and supports align with one another. Within the qualitative data four themes emerged that can be either a barrier to or a support for implementing a peer observation program successfully. The themes included: (a) school and/or team schedules, (b) confidence or trust in the process, (c) dedicated time for meetings and observations, and (d) making the process a priority for the teams and school. The survey data alluded to each of these themes and the focus groups and principal interview data confirmed the importance of these themes in creating an efficient and effective peer observation program for our school.

**Table 4**

*Barriers and Supports for Peer Observations*

Barriers	Supports
Schedule overlap between grade-levels	Alignment of schedules between grade levels
Lack of confidence in/comfort with the process	Establishing trust between observer/observee
Not combined with important meetings such as administration team meetings	Dedicated time
Not prioritized	Explicit/prioritized/accountability

Each administrator interviewed emphasized the importance of being mindful of the use of educator time, understanding teachers have many responsibilities to balance. One administrator said based on their own observations, “peer observation is not happening a lot, likely due to the

difficulty of getting out during teacher planning time.” To mitigate this challenge, administrators brainstormed suggestions for the use of already established times to support the peer observation process. These included the use of faculty meetings, PLC meetings, grade-level meetings, and early release days. Each administrator also shared the importance of embedded accountability in a peer observation framework. One administrator noted “the success of a peer observation process relies on it being something tangible, with built-in accountability.”

### **Teacher Triad Program**

Based on the data collected and the suggestions that emerged, I created a model framework for peer observation that teachers, administrators, and I piloted. In this framework, content colleagues across three grade levels were grouped into teacher triad teams. Through analysis of the whole-school schedule and with careful consideration for the barrier of time, currently embedded opportunities for collegial collaboration, namely a faculty meeting and a PLC meeting, were repurposed to support the goal of peer observation. In addition to the designation of time, the framework included templates for guidance in pre-observation meetings (see Appendix E), during the coordinated observation (see Appendix F), and post-observation debrief (see Appendix G). I interviewed teacher triad pilot groups after the trial and their responses have been categorized into benefits and challenges to the peer observation process (see Table 5). From the data I found there were six benefits to the triad process we used and three challenges. Both sets of themes are important as we work to develop our full peer observation program.

**Table 5***Triad Pilot Data*

Teacher Triad Pilot Group Feedback: Benefits	Teacher Triad Pilot Group Feedback: Challenges
Structure to the process: designated time <ul style="list-style-type: none"> <li>- Use of faculty and PLC meeting</li> <li>- Use of overlap in daily schedule between the three grade levels</li> </ul>	Difficulty aligning schedules due to one teacher in each triad requiring coverage
Structure to the process: templates for guidance	Not enough time for training on how to use the templates (i.e., a limitation of this particular study)
Increased collaboration among three grade-levels	Initially challenging if no prior relationship building has occurred
In-depth dialogue with colleagues	
Ability to carry-out peer observation if one member of the team was absent	
Frequency of peer observation cycle would allow for each educator to be observed once per quarter.	

One educator remarked they liked the “great feedback and advice, the time to reflect, and the dialogue with multiple people” as part of this framework. This same educator remarked “engaging in peer observation in this manner was very helpful, and I took feedback that I will immediately use in my classroom.” Another educator shared the triad approach to peer observation was “better than observing alone since it was a shared experience but it was also harder to coordinate the event.” Educators positively reflected on having designated time for

carrying out peer observation and templates for guidance in the process. One educator noted the benefit of “using time that is allocated for reflection.” Another educator discussed the importance of the relationship between educators, stating the observation process can be “nerve-wracking without prior relationship.” Despite this, educators dialogued during the pilot group debrief about how the peer observation process encouraged collegial collaboration; they hypothesized this process could enhance relationships between educators by increasing connections both within and across grade levels and content areas.

### **Discussion**

The results of this study show educators and administrators alike value collegial collaboration and consider the peer observation process as one of the most beneficial methods for encouraging professional growth. This study highlighted the need for clear vision and guidance to support adult learners as they engage in peer observation. Through the educator survey, it was evident there is an overall positive perception of the peer observation process including high levels of comfort among educators when observing peers, though many respondents shared this comfort was dependent upon the trust relationship between educators. According to the survey, teachers generally engage in self-reflective practice and use feedback to improve instruction. However, despite these perceptions, the follow-through with engagement in the peer observation process varied across the sample school. I believe this indicates a need for improved structure to support the peer observation process.

Educators provided feedback about the important factors that influenced the peer observation process and made suggestions for supporting this type of collegial interaction. Factors such as trust, open mindset, shared vision, and time were common among respondents. Educators noted the difficulty of collaborating with colleagues who display fixed mindsets and

the constant pressure of not enough time in the day to devote to such interactions. Of interest, though most educators discussed the time factor with regard to suggestions for supporting collegial collaboration and the peer observation process, many went on to describe this factor as requiring some type of accountability, such as purposeful designation of time, prompts to promote dialogue, and administrator engagement in the process.

Each of these highlighted factors aligns with Coyle's (2019) characteristics of highly successful groups. Building safety, sharing vulnerability, and creating purpose are all integral components of high-functioning groups. According to Coyle, encouraging educator collegiality and reflection requires a certain level of trust and an openness toward vulnerability. As educators have shared in this study, a high-trust environment is essential for creating a sense of safety that supports meaningful, collegial interactions.

Derived from my review of the literature and the initial data collection from teachers and administrators, I designed a framework model for the peer observation process, which the teacher teams and I piloted. In the post-trial focus group interviews, teacher triad group members shared the benefits and challenges they faced when following the new framework. Overall, the feedback was positive.

Through the use of a faculty meeting for pre-observation, common prep time for observation, and a PLC meeting for debriefing the observation, teacher triad teams felt supported in their engagement with the peer observation process. Educators noted the strengthening of relationships between the grade levels, the ease of follow-through with the designated time for the process, and the frequency with which observations could occur. Another benefit of working in teacher triad teams is the fail-safe for peer observation in the event one team member is absent. In one of the triad pilot groups, an educator, observation nearly fell through due to an

unanticipated absence. If peer observation were to occur in pairs, there could be an added challenge to follow-through with the process in light of educator absence. Teachers also shared that while it may be easier to carry out an observation independently, the benefit of two observers gathering feedback for the observee outweighed this particular challenge. In a group of three, the feedback and reflective dialogue were elevated.

The main challenge that persisted throughout the trial was coordinating schedules so the two observers could observe the observee at the same time. This barrier may have been present due to the short time-frame of this particular study and can be overcome with continued practice of the process, establishing a rhythm to carrying out peer observation. In addition, consideration for overlapping schedules and providing teacher coverage when needed could mitigate this scheduling challenge. Another limitation to this study was the lack of adequate time for preparing educators to engage in the process. With a more thorough understanding of how to observe and provide objective feedback, teachers may have been more comfortable engaging in the process.

Based on feedback from the educator survey and the peer observation pilot groups, educators within content areas are more comfortable with one another and, therefore, more inclined to engage in the peer observation process with one another. This is likely the result of frequent interaction due to attending the same weekly content meetings and monthly PLC meetings. Through these opportunities for interaction, trusting relationships have already been established, which paved the way for open, meaningful dialogue. By fostering collegial relationships in this manner, there is a higher level of comfort with trying out and reflecting on new ideas in the classroom.

To reinforce a sense of purpose in this important work, administrators and educators must collectively establish a shared vision around the peer observation process (Codrington, 2022; Coyle, 2019; Rodman, 2023). I believe creating a guiding framework supported educator collegiality and the peer observation process as it provided direction and inherent accountability. With more opportunity to engage with fellow educators and reflect on instructional strategies, as occurred in our pilot, schools can increase educator comfort with peer observation and foster a growth mindset among their adult learners. Through these means, collegial collaboration and self-reflection can become central to continuous professional learning.

### **Conclusion**

Educator professional growth must be at the forefront of education. If schools aim to foster meaningful learning cultures for their students, they should do the same for their teachers (Rodman, 2023). This study shed light on the importance of supporting adult learners by encouraging their collegial collaboration and self-reflection which are important elements for both individual and organizational growth (Codrington, 2022; Rodman, 2023). Through relevant, meaningful, and ongoing professional learning, educator instructional practices can continuously evolve (Breakspear & Jones, 2020; Crawford, 2022; Miller, 2023). Therefore, it is essential that school leaders collaborate with their educators to establish a shared vision around professional learning and provide structural support to follow through with initiatives (Coyle, 2019).

By using a cyclic, embedded peer observation framework, a culture of ongoing learning can be fostered. As a result of this study and in agreement with prior research, the use of teacher triad teams is an effective method for supporting peer observation, thus inspiring collegial collaboration and self-reflection (Crawford, 2022; Jarvis et. al., 2017; Rouleau, 2019). Through the teacher triad approach to peer observation, not only is there added value to the depth of

reflective dialogue, but also there is built-in flexibility for ensuring the observation cycle occurs. Peer observation triad teams are beneficial within content areas and may also be favorable cross-curricular (Torres et al., 2017). Though this study did not pilot cross-curricular peer observation teams, prior research has indicated broader impact when this approach is used for peer observation. Further comparison of cross-curricular teams with content-based teams is needed.

According to this study and in congruence with earlier research (Coyle, 2019; Rodman, 2023) trust, open-mindedness, shared vision, and time are essential factors for supporting collegial collaboration and the peer observation process. By establishing a shared vision and embedding a peer observation framework for guidance, data from this study indicated positive changes can occur in both individual educators and the school organization (Codrington, 2022; Rodman, 2023). Through peer observation there is embedded, school-wide capacity for professional learning (Jarvis et al., 2017). This study showed the availability of time as the most common constraint for collegial collaboration and peer observation. Based on the results of the teacher triad pilot groups' feedback and in correlation with adult learning needs (Rodman, 2023), school leaders can support their educators through the purposeful use of available time. By establishing a guiding framework, which dedicates time and training to the process, peer observation can be prioritized, encouraging educators and supporting the safe practice of new instructional strategies (Breakspear & Jones, 2020). Through collegial collaboration and self-reflection inspired by the peer observation process, a culture of learning and growth can be fostered.

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**Appendix A****Teacher Survey****1. Which grade level do you teach**

Check all that apply

Grade 6 \_\_\_\_\_

Grade 7 \_\_\_\_\_

Grade 8 \_\_\_\_\_

**2. In which content area do you teach?**

LA \_\_\_\_\_

Math \_\_\_\_\_

SS \_\_\_\_\_

Science Unified Arts \_\_\_\_\_

World Languages \_\_\_\_\_

Special Education \_\_\_\_\_

Enrichment or WIN specialist \_\_\_\_\_

Other \_\_\_\_\_

**Collegial Collaboration**

- 3.** In a collegial culture, individual needs and school needs are complementary as educators work together towards a shared vision (Codrington, 2022).

Based on this explanation, how would you rate your interactions with fellow educators?

Never    1    2    3    4    5    Always Collegial

- 4.** To what degree do you think collegial collaboration impacts student learning?

Strongly Disagree    1    2    3    4    5    Strongly Agree

5. Consider the following opportunities for collegial collaboration. How beneficial are they in supporting your own professional learning and growth?

	Rarely Beneficial	Sometimes Beneficial	Often Beneficial	Always Beneficial
Content Meetings	_____	_____	_____	_____
Team Meetings	_____	_____	_____	_____
Peer Observation (non-evaluative)	_____	_____	_____	_____
Professional Development Sessions	_____	_____	_____	_____
PLC Meetings	_____	_____	_____	_____
Informal Conversations	_____	_____	_____	_____
CIA Observations (non-evaluative)	_____	_____	_____	_____
Evaluator Observations	_____	_____	_____	_____

6. How often are you meeting with your colleagues?

	Once a Week	Twice a Week	Three or more Times a Week
Content Meetings	_____	_____	_____
Team Meeting	_____	_____	_____
Team Admin Meetings	_____	_____	_____
Informally—Before school, During Prep, During Lunch, After School	_____	_____	_____

7. How often do you discuss instructional practices with fellow educators at TRMS?

Always\_\_\_\_\_

Often\_\_\_\_\_

Sometimes\_\_\_\_\_

Rarely\_\_\_\_\_

Never\_\_\_\_\_

8. How comfortable are you in sharing ideas and resources with educators at TRMS?

Not Comfortable      1      2      3      4      5      Extremely Comfortable

9. Reflect on your experiences when engaging with other educators. What are the major factors that demonstrate collegial collaboration?

10. Reflect on your experiences when engaging with other educators. What are the major challenges to collegial collaboration?

11. In what ways can administrators provide more support for collegial collaboration among educators?

### **Feedback and Self-Reflective Practice**

12. How comfortable are you with receiving non-evaluative feedback from other educators at TRMS?

Not Comfortable      1      2      3      4      5      Extremely Comfortable

**13.** To what degree does feedback influence your classroom instruction?

Never 1      2      3      4      5      Always

**14.** How frequently do you reflect on your instructional practice?

Never 1      2      3      4      5      Always

**15.** When reflecting on instructional practice, how often does the reflection involve dialogue with a colleague?

Never 1      2      3      4      5      Always

**16.** How comfortable are you in taking risks in your classroom, trying new strategies to improve instructional practice?

Not Comfortable      1      2      3      4      5      Extremely Comfortable

### **Peer Observations**

**17.** How frequently do you use the Pineapple Chart to share what is happening in your class or to see what is happening in another class?

We have a Pineapple Chart? \_\_\_\_\_

Rarely \_\_\_\_\_

Sometimes \_\_\_\_\_

Often \_\_\_\_\_

Always \_\_\_\_\_

**18.** Please provide feedback about the Pineapple Chart. Why have you or have you not used the chart?

**19.** This school year, how often have you ventured to another teacher's classroom to observe their lesson?

Never      1 Time      2 Times      3 Times      4+ Times

**20.** This school year, how often have other educators observed your lessons?

Never      1 Time      2 Times      3 Times      4+ Times

**21.** How comfortable are you with observing your peers?

Not    1    2    3    4    5    Extremely Comfortable

**22.** How comfortable are you with having other educators observing your class?

Not    1    2    3    4    5    Extremely Comfortable

**23.** What are some benefits to observing fellow educators while they teach?

**24.** What are some barriers to observing fellow educators while they teach?

**Appendix B**

**Observation Field Notes**

Observational Role: \_\_\_\_\_

Date: \_\_\_\_\_

Grade Level: \_\_\_\_\_

Interaction Type: \_\_\_\_\_

*(peer observation, team meeting, content meeting, etc.)*

Description of Educator Interactions:

Reflective Notes:

## Appendix C

### Focus Group Interview Questions

Interviewer: \_\_\_\_\_

Date: \_\_\_\_\_

Grade Level: \_\_\_\_\_

Meeting Type: \_\_\_\_\_

Questions for Focus Groups:

1. How frequently do you meet and why have you chosen to meet this often?
2. Do you have an agenda? Do you follow it? How is the agenda created?
3. What do you hope to accomplish with your meetings? What types of dialogue do you prioritize during your meetings?
4. Have you observed one another in your classes? If not, would you like to? Why or why not?
5. Have you observed other educators within your grade-level? Across your grade-level? Why or why not?
6. One of our school goals focuses on peer observation. How do you think we are doing as a school in achieving this school goal?
7. What is needed to support this school goal? How can we encourage more educators to engage in the peer observation process?

**Appendix D****Administrator Interview Questions**

Interviewer: \_\_\_\_\_ Date: \_\_\_\_\_

Interviewee: \_\_\_\_\_ Grade Level: \_\_\_\_\_

## Questions:

1. How would you describe educator collegiality in our school?
2. What do you think about our current schedule design? Discuss your perceptions of the time available and use of that time to support collegial collaboration and educator self-reflection.
3. What are your thoughts about the Pineapple Chart?
4. One of our school goals focuses on peer observation. How do you think we are doing as a school in achieving this school goal?
5. What is needed to support this school goal? How can we encourage more educators to engage in the peer observation process?

**Appendix E**

**Pre-Observation Notes**

**Observee:**

**Date of Observation:**

**Brief Summary of Lesson:** *Short and sweet, what will you be doing?*

**Observation Focus:** *Teaching practices, what do you want the observers to look for?*

*Note:* This template was created with my colleague Matthew McCabe as part of our work with Mike Anderson, an educational consultant. Mike Anderson Consulting:

<https://leadinggreatlearning.com/>

**Appendix F**

**Observer Observation Notes**

**Observer:**

**Date of Observation:**

<b>Observation Focus:</b> <i>Teaching practice(s) to look for</i>	
<b>Observation Notes:</b> <i>Specific, objective observations only</i>	
<b>2 Positives and a Push:</b> <i>Identify 2 positives + 1 push (area to work on/suggestion)</i>	
<b>Positives</b>	<b>Push</b>

*Note:* This template was created with my colleague Matthew McCabe as part of our work with Mike Anderson, an educational consultant. Mike Anderson Consulting:

<https://leadinggreatlearning.com/>

## Appendix G

### Post Observation Debrief Guidelines

#### Post Observation Debrief Guidelines:

##### Observers:

1. Refrain from using vague statements such as, “Good job.”
2. Share direct observations as recorded in observer notes.
3. Share the two positives and the push.

##### Observee:

1. Listen to feedback from observers without response.
2. Once observers have finished sharing feedback, ask questions and engage in dialogue.
3. Set new goal(s) for improving instructional practice.

*Note: These guidelines were adapted from my work with Mike Anderson, an educational consultant. Mike Anderson Consulting: <https://leadinggreatlearning.com/>*

**Appendix H****Peer Observation Pilot Group: Post-Assessment Questions**

Interviewer: \_\_\_\_\_ Date: \_\_\_\_\_

Interviewees: \_\_\_\_\_ Grade Level(s) \_\_\_\_\_

## Questions:

1. What feedback can you provide about engaging in the peer observation process?
  - a. What did you like?
  - b. What would you change?
2. Based on your experience, how long should peer observation last in a class period?
3. How frequently should peer observation occur throughout the school year?
4. How did engaging in peer observation contribute to your self-reflection of instructional practices?
5. How did you feel about receiving feedback from your peers?
6. How did you feel about providing feedback to your peers?

**Teacher Mentor Programs—Reflections on a First-Year Implementation Process**

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**Abstract**

High teacher attrition rates may contribute to educational inequity for students, primarily for those who are members of marginalized communities. Currently, teacher retention rates are lowest in low-income, high-minority schools and districts. As one way to level the playing field, educational leaders may be able to use teacher mentor programs to increase teacher retention. When implemented correctly, those who run these programs have the potential to not only support newly hired teachers but to also empower veteran staff. In this article, I highlight my school district's conscious decision to revitalize our teacher mentor program through purposeful planning, meaningful data collection, and consistent reflection and revision. As the mentor program coordinator, I worked with my district curriculum coordinator, teacher mentors, and newly hired staff in all phases of the process to ensure successful implementation. Although we found great success in several areas of our revitalized program, after data analysis and careful reflection, we learned there were still improvements to be made. We then used those lessons to make conscientious and data-driven decisions to continue the growth of our teacher mentor program.

*Keywords:* data-driven decisions, job satisfaction, teacher empowerment, teacher job satisfaction, teacher mentoring

Although teacher retention has been a significant issue in the United States for the past decade, in recent years, more and more teachers are leaving their positions and the field entirely (Kaufman & Diliberti, 2021). For example, at the start of the 2024–2025 school year, workforce reports and state agency documents revealed that in 30 states and the District of Columbia, close to 42,000 teaching positions were unfilled. Also, in 49 states, approximately 365,000 teaching positions were held by non-certified teachers. In total, this means one out of eight teaching positions were either unfilled or filled by uncertified, underqualified teachers (Tan et al., 2024), and this only accounts for the states whose representatives reported this data. Although the number of vacant positions is down from 100,000 when compared to school year 2017–2018 (Darling-Hammond, 2022), in 2023, more than three-quarters of the country was still in a teacher shortage (Jones, 2023). One year later, 86% of public schools still found it difficult to hire teachers and fill all positions for the upcoming school year (Peck, 2025). While some states have better teacher retention rates than others, it is clear the teacher shortage is maintaining its status as a national crisis because of the costs to teaching, learning, and school morale (Ronfeldt et al., 2013; Sorensen & Ladd, 2020).

### **Using Teacher Mentor Programs to Increase Teacher Job Satisfaction and Retention**

One way to approach the issue of retaining teachers is to ensure that school districts implement and maintain research-based teacher mentor programs. In doing so, they not only support new teachers, but they also empower veteran teachers who are willing to be mentors. Newly hired teachers clearly need systematic support (Radford, 2016) as they take on the intimidating challenge of a new teaching role. Otherwise, they may never build the self-efficacy they need to stay in the profession for an extended period of time (Bandura, 1997; Han, 2023; Ingersoll & Strong, 2011). Teacher mentors also feel benefits when they take on the extra role of

being a leader in their school. This is because they often feel empowered when they serve as a mentor and as if they can use the program as a way to improve their own practice (Guha et al., 2016). Johnson and Birkeland (2003) also determined that both parties benefit from the mentoring process; the mentee feels supported and even inspired, while the mentor is reinvigorated about teaching and learning. Furthermore, Bowman (2014) discovered that mentoring had a positive effect on teacher collaboration, emotional resilience, and a sense of belonging for both the mentor and the mentee. Essentially, school principals and district leaders will find that when they use a teacher mentor program that supports new teachers while empowering teacher experts, teacher job satisfaction will increase and therefore, teacher retention rates should increase as well (Ingersoll et al., 2018; Ingersoll & Strong, 2011; Maready et al., 2021; National Institute for Excellence in Teaching, 2021).

### **One District's Revitalization Process**

Using the research regarding the importance of teacher mentor programs, at the end of the school year 2023–2024, my district curriculum coordinator and I decided to collaborate to revamp our teacher mentor program in our rural New Hampshire school district. Using research-based strategies and data collected from a 2023 end-of-school-year survey, we decided to move forward with implementing a mentor-designed program that focused on providing support for newly hired teachers and finding ways to empower veteran staff. Our primary focus for this program was to supply differentiated experiences for all new staff, since they come into our district with varying levels of experience and competence, and to give shared decision-making opportunities to mentors.

After school principals hired teacher mentors who were in good professional standing and consistently demonstrated effectiveness as instructional leaders, we provided a summer training

program for all mentors. The first focus of the training was to review how adults best learn, because we felt that for the mentor program to have success, we needed to adhere to practices that would play directly into the way in which adults learn (Knowles, 1984). Not only did we want our newly hired staff to feel supported, we also wanted to ensure our mentors provided opportunities for them to learn about and perfect their practice, since the primary focus of such a program is to help newly hired teachers provide quality instruction for students. Once this review of adult learning theory was complete, we used the rest of our training session to create our vision and our mission statement. From there, we embedded these components into the design of all remaining aspects of the program (see Appendix A for an overview of the entire program).

Once these pieces were complete, we decided to move forward in designing the nuts and bolts of the program itself. As the facilitator of the training session, I knew we first needed to review what we already had in place and then decide what to keep, what to discard, and what to revise. In the end, the mentors decided to retain the basic structure of the program, with the district curriculum coordinator and myself as the individuals to oversee the entirety of the program, a lead mentor in each building to facilitate building cohort meetings and provide additional support to both first and second-year mentees, and an assigned mentor for each individual mentee. The mentors and facilitators believed this structure would not only allow for ample support regarding all school-related issues, but also would ensure that if, for some reason, there would be a problem between their mentor and mentee, both the mentor and mentee would have other professionals on which to rely. The mentor program facilitators understood that a tiered and profound support system would be crucial to the success of our teacher mentor program.

We also decided to keep the meeting schedule we had used in the past, with a few tweaks. First, we agreed that mentors needed to continue meeting with their mentees one-on-one on a monthly basis. However, we also came to the consensus that mentors should have autonomy over the way in which these meetings are scheduled and what should be included on the agenda. This helped to ensure mentors felt empowered to differentiate these meetings to fit the needs of their mentees. We also felt it was necessary to hold building and district cohort meetings, which, altogether, would give mentors and mentees another way to connect with each other about once per month. We viewed these meetings as integral to the overall support system for both mentees and mentors as they navigated their way through the program. We decided that four of the eight district cohort meetings would be revised into choice workshops for mentees in which mentors would design and host workshops on a variety of topics. We made this decision based on solicited feedback from past mentors and mentees through informal conversations and a yearly end-of-year survey that asked all program participants to rate their experience in the mentor program. It was clear that due to the structure and topics of the past district cohort meetings, these meetings, at times, were not viewed as useful or necessary. By providing options for four of these meetings, we hoped to be better able to differentiate and meet the needs of our new teachers (see Appendix A for some examples of the choice workshops we provided).

In addition to the regularly scheduled meetings, the program facilitators chose to incorporate peer observation cycles. In previous years, this was an unsuccessful component of our mentor program, so we knew we needed to further exam its implementation. In the end, mentors decided they wanted to do two rounds of peer observations for their mentees, since they knew they were seen as instructional leaders and could truly help to improve their mentee's practice. Although the lead mentors at each school coordinated this in a slightly different way, all

mentors agreed to use the same peer observation protocol so we could maintain consistency and compare notes regarding the way the observation process went (see Appendix A for a description of this process).

One interesting discussion revolved around the role of building administrators in our mentor program. In the end, all mentors agreed the school principal's involvement should be minimal, since we wanted the mentor program to be a place in which mentees and mentors feel safe to express concerns without risking the chance that administrators may view them poorly or reprimand them for any mistakes they made. Building principals, however, were asked to take on two responsibilities for the mentor program. First, the mentors decided it should be part of the building principal's job to actively recruit and hire competent teacher mentors. During this summer meeting, lead mentors expressed frustration with past hiring practices, concerned that principals were hiring mentor teachers who did not keep up with the responsibilities of the job and in fact, imposed negative attitudes on newly hired staff (Moultroup, 2024). To try to curb this situation, the mentors decided, with the district coordinator's consent, that building principals must consult the lead mentor in each school when hiring teacher mentors. Although this may be a difficult conversation to have, lead mentors were willing to take on these discussions to ensure that only teachers who are committed to the program and can be effective mentors are hired. In addition, if there are very few teachers interested in being mentors or if too few people apply for the position, mentors decided the school principal must collaborate with the lead mentor to actively recruit applicants who would make competent mentors.

In addition to these changes, the mentors decided to add a few components to the program. Those who had served as lead mentors in previous years wanted a way to hold mentors and mentees accountable for attending and participating in regularly scheduled meetings. As a

way to do so, the mentors created a simple online monthly log for their individual mentor-mentee meetings that chronicles how often they have met and what the major focus was of their meetings. In addition, for each building cohort meeting, district cohort meeting, and choice workshop, the mentors created an exit ticket that doubles as our data collection tool. Not only does this exit ticket hold mentors and mentees accountable for attending meetings, I also analyzed the data to share with mentors so we can consistently reflect on our practice and make changes as necessary. Lastly, mentors decided that if a mentee does not attend and participate in at least 70% of the meetings, the district curriculum coordinator can ask them to complete year one of the mentor program again in their following year of employment. If a mentor does not attend at least 70% of the meetings, the lead mentor communicates this issue to the district coordinator, and then the coordinator may address the issue as they see fit. It is important to note that these accountability measures were created by the mentors themselves, and not those who would need to impose them on others.

As the facilitator of this program, I knew that for a mentor program to be successful, mentors needed to feel supported and empowered just as much as the mentees. So, we decided to add three mentors-only meetings within the school year—one in the fall and two in the spring. During these meetings, we took time to check in with one another, design additional aspects of the program we did not address in the summer training (for example, we used the fall meeting to design the peer observation cycles), review the exit ticket data, make decisions based on this data, and air any concerns or issues regarding mentees and the overall mentor program. It was understood and confirmed that these meetings were established as a safe zone in which all concerns could be addressed without retaliation or reprimand from administrators, since administration was not present at these meetings.

### Data Analysis

At the end of the school year, I compiled and analyzed exit ticket data. To assess whether mentors and the structure of the program were meeting the needs of mentees, the program facilitators asked mentees to rate their experience in the program on a scale from one to five according to the key concepts of our program vision: opportunities for meaningful collaboration with colleagues, an overall feeling of positivity, supportive interactions, time to reflect on instructional practices, the promotion of high quality work with students, and the empowerment of teachers. Mentees completed this exit ticket every time they met with building cohorts and participated in a choice workshop, which resulted in collecting data a total of eight times, or approximately once per month (exit tickets were not administered in February due to cancelled meetings on snow days, and we did not have any mentor meetings in the month of June). Please see Table 1 for compiled data from the mentee and mentor exit tickets.

**Table 1**

*Compiled Exit Ticket Data*

Program component	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
<b>Self-Reflection</b>					
Mentees	52 (62%)	20 (24%)	9 (11%)	1 (1%)	2 (2%)
Mentors*	24 (32%)	37 (50%)	8 (11%)	4 (5%)	1 (1%)
<b>Collaboration</b>					
Mentees	62 (74%)	13 (15%)	5 (6%)	1 (1%)	3 (4%)
Mentors*	43 (59%)	24 (33%)	1 (1%)	1 (1%)	4 (6%)
<b>Support</b>					
Mentees	53 (63%)	18 (21%)	5 (6%)	2 (2%)	6 (7%)
Mentors*	32 (43%)	30 (41%)	7 (10%)	1 (1%)	4 (5%)

		Empowerment			
		<hr/>			
Mentees	38 (45%)	34 (41%)	6 (7%)	2 (2%)	4 (4%)
Mentors*	34 (46%)	24 (32%)	11 (15%)	5 (7%)	0 (0%)
		<hr/>			
		Quality Work			
		<hr/>			
Mentees	41 (49%)	30 (36%)	8 (10%)	1 (1%)	4 (5%)
Mentors*	26 (35%)	34 (46%)	10 (14%)	4 (5%)	0 (0%)
		<hr/>			
		Positive Experience			
		<hr/>			
Mentees	60 (71%)	16 (19%)	3 (4%)	2 (2%)	3 (4%)
Mentors*	35 (47%)	28 (38%)	6 (8%)	2 (3%)	3 (4%)

*Note:* Mentees  $n = 84$ ; Mentors\*  $n = 74$ ; Mentors\*\*  $n = 73$

On a monthly basis I compiled all responses and analyzed the exit data at the end of the school year. Because I completed monthly analyses and shared that data with mentors during our mentors-only meetings, the mentors and program facilitators used this meeting time to reflect on the program and our practice. Together, we used the data to decide what needed to continue happening in the program and what needed to be added or changed. At the end of the school year, the mentee responses indicated that 90% agreed or strongly agreed that the mentor program was a positive experience, and 89% of mentees agreed or strongly agreed the program encouraged and allowed for mentees to collaborate with colleagues. In addition, 86% of mentee responses showed the mentees agreed the program promoted self-reflection and empowered teachers. According to the data analysis, 85% of mentee responses indicated the mentor program challenged mentees to provide quality curriculum, instruction, and assessment for students. Also, 84% of mentee responses indicated they agreed the program and mentors provided a supportive environment for newly hired teachers. As a result, mentors, lead mentors, and program

facilitators identified two primary focus areas as we continue to revise both years one and two of the program: promoting quality work and providing a supportive space for mentees and mentors.

Because the program facilitators and mentors felt the first year of the mentor program was best used to help mentees master the district and school procedures and policies, we decided to focus on the quality of work during the second year of the mentor program. We felt that once the first-year foundation is laid, mentors can provide more opportunities to dive further into providing quality instruction during the program's second year. Lead mentors also chose to review the hiring process as a way to address the support issue, since mentees who had rated the program as not providing enough support were employed in roles other than classroom teaching positions, such as school counselors, special educators, nurses, and social workers. In fact, out of seven total disagree or strongly disagree responses regarding the level of support over the course of the entire year, 88% (seven out of eight) of these responders were employed in non-classroom teaching positions. This means that only 12% of disagree responses came from one other mentee, who was a classroom teacher. Due to these results, the lead mentors made some suggestions for providing more support to those who are hired in unique positions, as indicated below in the next section under "Lessons Learned."

In addition to this data, mentors also completed exit tickets at the end of building cohort and mentors-only meetings (please see Table 1). These exit tickets asked mentors to also rate the six major components of the mentor program, and were phrased in the exact same way they were posed to mentees. In total, mentors completed exit tickets five times (at the end of building cohort meetings and mentors-only meetings). Over the course of the year, 92% of mentor responses indicated that mentors agreed or strongly agreed that the mentor program provided opportunities for meaningful collaboration. In fact, collaboration was the only component on

which mentors agreed at a higher rate than mentees did. For every other program component, mentors agreed at a lower percentage. For example, while 90% of mentee responses indicated mentees felt the program was a positive experience, while 85% of mentor responses indicated the same. There were similar discrepancies when it came to self-reflection, quality work, and empowerment, with empowerment showing the largest gap (86% of mentee responses showed mentees felt the program empowered teachers, while 77% of mentor responses indicated the same). Only one program component seemed to have been viewed quite similarly, with 84% of mentee and mentor responses indicating the program participants felt the program was supportive of newly hired teachers.

When lead mentors examined the data analysis, it felt unclear as to why, on four out of six components, mentors agreed at lower rates than mentees, but some individuals offered up assumptions to explain the results. First, some lead mentors felt their own experience in the mentor program when they were first hired may have altered the way they view the new and revised program, especially if they felt their own experience was unmeaningful. They also felt it was possible that professionals who had served in the role as mentors for several years were holding on to the negative experiences their mentees had had in the past, and they had yet to come around to the idea that the program had changed and may now provide a more positive experience. Regardless, the lead mentors saw these discrepancies in the data as a problem to be addressed, and they brainstormed some possible solutions, which will be described in the next section.

### **Lessons Learned**

There were many lessons to be learned throughout this process. Some lessons were small and were resolved with easy solutions, while others required some critical thinking skills in order

to identify the cause of the problem and then find a solution that worked best for everyone. First, one small lesson involved the scheduling of mentor training and the application process. Because we did our initial training in August before the school year officially started, many teachers who were hired as mentors were not able to attend the training. The easy solution to this problem was to include the summer training date in the job description and application process. That way, when teachers apply to be mentors, they are aware of the training date and can make sure to add it to their calendars so they can attend the training.

We also ran into an additional issue regarding hiring mentors. At the start of the school year, we had several unfilled teaching positions and luckily, we were able to hire for those positions mid-year. However, this created a situation in which newly hired staff members needed mentors and unfortunately, we did not train enough mentors during the summer because we had only trained enough for the new staff we had hired at that time. As a result, I found myself scheduling more training sessions throughout the school year so that not only did we have enough mentors to go around, but I could also make sure the new mentors understood each aspect of our program. After consulting with the district administrator, we decided that in the future, we will hold a training session for all staff who are interested in being mentors, even if we end up with more trained mentors than actual mentees. That way, we can eliminate the need to train new mentors mid-year, and we end up with a larger pool of mentors from the very beginning.

One last simple problem was that mentors often had scheduling conflicts when it came to our building cohort, district cohort, and choice workshop meetings. This is because most mentors also serve their schools as team leaders or department heads, and those meetings were often scheduled on the same days as our mentor meetings. This was an unintended oversight on the

part of the school and district administrators, but it required a very simple fix. In the future, district and school administrators will ensure that department and team leader meetings are not scheduled on the day of the week on which mentor meetings are scheduled. This way, mentors can continue to serve in both roles and participate in all necessary meetings.

In addition to these smaller issues, we experienced some bigger problems that needed more time and reflection to correct. First, it became clear quite early on, based on the exit ticket data, that we were struggling with supporting newly hired staff who did not serve in classroom teacher positions, such as school nurses and social workers (as indicated in the Data Analysis section). The major issue was the lack of an immediately available support system for these new staff members. After much reflection, the mentors and I figured this was likely due to the uniqueness of these positions. Unlike other positions in our small school district, people who are hired for these jobs often are the only ones to serve their school in that position. For example, there is only one elementary school nurse, rather than a group of nurses who work together. To mitigate this issue, we initially tried to pair them with a mentor who was in a similar position in another school (i.e., the elementary school nurse's mentor was the middle school nurse). However, these new staff members still reported feeling less supported when compared to classroom teachers. The mentors and I figured this was created by an issue with proximity, or the ability to easily talk to someone nearby who may be able to provide support or help solve problems. We decided that in the future, these staff members will be assigned a mentor within their building, regardless of whether the mentor is in a similar position. That way, the mentor can provide support for district and building procedures and protocols or any other issue that pertains directly to the school. It will be this mentor's responsibility, however, to connect their mentee to other staff members who play similar roles in other buildings and help them build collegial

relationships with these important colleagues. That way, the mentee has a support system readily available to them but will also have a connection with other staff members who may be able to provide guidance on issues particular to their job responsibilities. It is our hope that through this tiered process, these staff members will feel more supported overall.

In addition, the lead mentors in each building expressed concern regarding accountability for mentors and whether they were performing their job duties. It was clear that many mentors adhered to the monthly meeting schedule and worked hard to support their mentees. However, some mentors failed to do so. Even though lead mentors wanted to place trust in all mentors, it became clear that due to a lack of job fulfillment, some mentees did not feel supported throughout the school year. As a result, lead mentors added a new item to their job description, which is to check on monthly meeting logs at the end of every month and follow up with mentors regarding these meetings, if necessary. We also revised the monthly meeting log form to include a “notes” section that we hope will encourage mentors to provide more information about each meeting so that lead mentors know they are fulfilling their job duties.

Lastly, when designing the choice workshop aspect of the mentor program, the district curriculum coordinator and I assumed all mentors would be willing to put on a professional development session on a topic of their choice for their peers, with the intent of trying to empower them. However, at our first mentors-only meeting, one mentor expressed concern with this aspect of the program, as they felt they did not have enough time to design a workshop and, quite frankly, did not feel comfortable doing so. As she started this discussion, it was clear many of the other mentors felt the same way, especially because the design and presentation of a workshop was not included in the mentor job description. Clearly, we needed a way to fix the situation so we could keep our highly competent mentors.

After the meeting, I sent an email to the entire mentoring staff asking them to let me know if they no longer wanted to design a professional development session for newly hired staff. As a result, several mentors expressed their disinterest, which I was grateful for, since I knew I was no longer requiring them to do something they were not interested in and was also not a part of their job description. This did create an issue, however, because I then no longer had enough workshop facilitators to cover the entirety of the four choice workshop meetings. I decided to reach out to the lead mentors in each building for suggestions on what to do, and they felt it would be a great idea to elicit help from other staff who were not mentors. After reaching out to staff in each building, we received interest from enough staff members to be able to offer a wide variety of workshops to our newly hired staff. In the end, I believe this process allowed for more differentiation in the workshop session topics and the empowerment of more teachers, since so many of the workshop facilitators are also competent teachers who were not hired as mentors.

### **Next Steps**

As with all new endeavors, it is important to find ways to maintain successful work and effective programs, such as our mentor program. Our first step to continue the success of this program will be to carry on the effective components and make the necessary changes based on the problems we encountered this school year. Mentors and program facilitators will continue to revise the program as needed, based on research and data analysis from the program's exit tickets and informal mentor and mentee feedback.

One primary focus moving forward will be the development and refinement of the second year of our mentor program. Due to the time dedicated to the implementation of our new first-year program, we are still finding the need to revitalize year two. Currently, the second year of

the program entails guidance and support from the lead mentor in each building, three building cohort meetings, and three district cohort meetings. As part of the next mentor training session, we will once again seek the advice and wisdom of those being trained as mentors in how this phase of the program should look. That way, they continue to have decision-making power over the program they will be working hard to implement.

Lastly, and mostly due to the success of the program and the lessons we learned in the implementation process, we plan to promote our mentor program at future conferences and workshops. As of right now, the state of New Hampshire does not require that each district implements a teacher mentor program. However, after collecting data and interviewing educators, the state's 2023 Committee to Study New Hampshire Teacher Shortages and Recruitment Incentives suggested ten recommendations for each district to consider to recruit and retain great teachers (Reaching Higher N. H., 2025). As a way to promote some of the committee's recommendations, our program will be a shareable document that any district or school leader can use and modify as it best suits their needs. Ideally, through the sharing of our program, we will acquire new connections with leaders from other districts who can share their successes and issues with their own mentor program, helping to make ours even better. And of course, the goal in this borrowing process is to create and implement effective teacher mentor programs in as many districts as possible, with the idea that as a result, we can only positively impact teacher job satisfaction and teacher retention rates, which may help level the educational playing field for students who are members of marginalized communities. As long as we keep the students as our main focus, I know we will meet great success with this mentor program.

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**Appendix A**

**Teacher Mentor Program Guide**

**SAU #34 Mentor Program**

**Proudly serving the communities of**

**Hillsboro, Deering, Washington, and Windsor**

**2025-2026 Mentor Team**

Shannon Adamo, ES Teacher

Rebecca Bagtaz, ES Teacher

John Bramley, HS Teacher

Jessica Granger, MS Teacher

Jeni Laliberte, Director of Curriculum, Instruction, and Assessment

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Abigail McHugh, HS Teacher, Lead Mentor

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August 2025

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### **Vision Statement**

Through the SAU #34 Mentor Program, we hope to encourage self-reflection, develop quality instruction, and empower employees in a positive, collaborative, and supportive environment.

### **Mission Statement**

We will achieve our vision through the following:

1. Focused and direct conversations
2. Thoughtful mentor/mentee pairings
3. Consistent and open communication
4. Needs-based differentiation
5. Meaningful professional development
6. Accountability for applicable staff

### **Program Staff and Roles**

The mentor program is designed to provide support for every first-year staff member, including teachers, nurses, and school counselors. Several veteran staff members participate in the program in the following roles:

1. Mentor Program Coordinators - One district administrator and one mentor collaborate to:
  - a. Facilitate mentor training and ongoing professional development
  - b. Support mentors with resources and information
  - c. Provide orientation for newly hired staff
  - d. Support mentees, as needed
  - e. Coordinate monthly new staff workshops/meetings
  - f. Collect and analyze data regarding the program's effectiveness
  - g. Revise and edit the components of the mentor program, as needed
2. Lead Mentors - One lead mentor in each school works to:
  - a. Act as a liaison between mentors and administrators, mentors and mentees, and mentees and administrators (as necessary)
  - b. Plan and coordinate building cohort meetings with mentors and mentees
  - c. Ensure data collection occurs at designated meetings
  - d. Collaborate with the school principal on the selection and hiring of mentors
  - e. Support mentors, as needed
  - f. Aid in the scheduling of choice workshops for mentees, when professionals outside of the mentoring program are needed
  - g. Coordinate peer observations for first- and second-year mentees
  - h. Perform mid-year mentee check-in through a Google Form and follow-up with

- mentors, as needed
  - i. Check monthly mentor/mentee meeting logs and follow-up with mentors, as needed
  - j. Review mentor program at the end of the school year and make suggestions using analyzed data
3. Mentors - Each mentor works to:
- a. Provide support for one newly hired staff member in a variety of ways, such as:
    - i. Monthly one-on-one meetings
    - ii. Check-ins on an as-needed basis
    - iii. Peer observations
    - iv. Providing resources and information
    - v. Acting as a liaison between mentee and administrators, if needed
  - b. Maintain and submit monthly meeting logs
  - c. Participate in ongoing training and professional development
  - d. Plan and implement at least one new staff workshop/meeting (this is optional)
  - e. Coordinate observations for mentees in other professionals' classrooms and/or environments
  - f. Participate in the data collection process and help to revise the program, as needed

**Mentor Program Components - Year 1**

<b>What is happening?</b>	<b>Who is responsible?</b>	<b>When does this happen?</b>	<b>What are the details?</b>
Mentor Training and Professional Development	Program Coordinators  Mentors (attendees)	One full-day in summer  3x per year for one hour	Focus on adult learning theory  Data analysis review and constant program revision  Check-ins regarding mentees and who may need additional support
New Staff Orientation	Program Coordinators  Mentors	Two full days in August	One day dedicated to district overview, policies, procedures, access to technology and software programs, goal setting, etc.  One day dedicated to building cohort meetings and mentor/mentee meetings
			Mentors coordinate monthly dates/times with their mentees  Once these meetings are scheduled, mentors send

<p>Mentor/Mentee Meetings</p>	<p>Mentors and Mentees</p>	<p>1x per month for one hour</p>	<p>meeting dates/times to the program coordinators</p> <p>If a meeting must be canceled for an unforeseen reason, mentors must attempt to reschedule the meeting</p> <p>During summer training, mentors establish pre-determined topics for meetings (see Appendix A)</p> <p>Mentors may include ample time for mentees to discuss any questions/concerns</p> <p>Mentors complete and submit an online meeting log (see Appendix B)</p> <p>Mentors understand the time they spend with their mentee may vary based on their mentee’s needs, but monthly meetings are a required component of the program</p> <p>Lead mentors check monthly meeting logs on a monthly basis and follow-up with mentors, as needed</p>
			<p>Lead mentor creates and sends agenda to building mentors one week prior to meeting, seeking feedback</p>

Building Cohort Meetings	Lead Mentors  Mentors and Mentees (attendees)	4x per year for one hour	and making necessary changes prior to the meeting  Lead mentor ensures all attendees complete the Exit Ticket (see Appendix C and D)
District Cohort Meetings	Program Coordinators  Mentors  Mentees (attendees)	First Year Cohort Meetings  4x per year for one hour  SAU Administrator and Mentees	District administrator plans and implements full-cohort meetings with all first-year staff  Mentees choose a topic to present to their cohort during one of the meetings
		Mentee Choice Workshops  4x per year for one	Program Coordinators gather ideas for workshops/discussions from mentors and create a choice workshop schedule (see Appendix E)  Program Coordinators disseminate the choice workshop schedule to mentors and mentees, coordinate sign-ups, and gather necessary resources/materials

		<p>hour</p>	<p>Presenters design and put on the workshop</p> <p>Mentees attend the workshop/discussion of their choice and complete the exit ticket (see Appendix D)</p>
		<p>Program Review Meeting</p> <p>1x per year for one hour at the end of the school year</p>	<p>Program Coordinators review collected and analyzed data through exit tickets</p> <p>Program Coordinators disseminate a program review survey for mentors and mentees to complete</p> <p>Program Coordinators analyze end-of-year data and share the analysis at the summer mentor training session</p>
<p>Mentor Program Accountability System</p>	<p>Program Coordinators</p>		<p>Mentors complete and submit meeting logs for monthly mentor/mentee meetings (see Appendix B)</p> <p>Mentees and mentors must attend and participate in 70% of all meetings</p> <p>Mentors and mentees complete Exit Tickets for Building Cohort Meetings and Choice Workshops (see</p>

	<p>All Mentors</p> <p>All Mentees</p>		<p>Appendix C and D)</p> <p>Lead mentors address concerns regarding meeting attendance (for mentors and mentees) with mentors, then seek assistance from program coordinators, if needed</p> <p>Lead mentors check monthly meeting logs and follow-up with mentors, if needed</p> <p>Lead mentors administer mid-year check with mentors, in which they ask if mentors feel their mentees need additional support</p>
<p>Peer Observation Cycles</p>	<p>Program Coordinators</p> <p>Lead Mentors</p> <p>All Mentors</p> <p>All Mentees</p>	<p>2x per year (Fall and Spring)</p>	<p>District administrator selects dates for observations and communicates these dates to building administrators and lead mentors</p> <p>Lead mentors coordinate schedules for observations and communicate these schedules to mentors and mentees within their building</p> <p>Mentor uses the Purposeful Observation method for each cycle (see Appendix F), which includes:</p> <ol style="list-style-type: none"> <li>1. Fall - Mentee observes mentor</li> </ol>

			<ul style="list-style-type: none"> <li>a. Prior to the observation, mentors meet with mentees one-on-one to decide on a focus area for observation (this is mentee-driven)</li> <li>b. After the observation, mentor and mentee engage in a meaningful discussion regarding the focus area</li> </ul> <p>2. Spring - Mentor observes mentee</p> <ul style="list-style-type: none"> <li>a. Prior to the observation, mentors meet with mentees one-on-one to decide on a focus area for observation (this is mentee-driven)</li> <li>b. Mentor completes observation using the Running Time Observation Record (see Appendix G)</li> <li>c. After the observation, mentor and mentee engage in a meaningful discussion regarding the Running Time Observation Record notes</li> </ul>
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Mentor Program Components - Year 2

What is happening?	Who is responsible?	When does this happen?	What are the details?
Building Cohort Meetings	Lead Mentors  2nd Year Mentees	3x per year for one hour	Lead mentor creates and sends agenda to mentees one week prior to meeting, seeking feedback and making necessary changes prior to the meeting  Mentors and lead mentors decide on meeting topics at summer training  Lead mentor ensures all attendees complete the Exit Ticket (see Appendix D)
District Cohort Meetings	Program Coordinators	3x per year for one hour	District administrator plans and implements full-cohort meetings with 2nd year staff  Mentees complete choice book study and present information to rest of cohort
	2nd Year Mentees	Program Review Meeting - 1x per year	Program Coordinators disseminate a program review survey for mentors and mentees to complete  Program Coordinators analyze the data and share

		for one hour	the analysis at the summer mentor training session
Peer Observations	Program Coordinators  Lead Mentors  2nd Year Mentees	2x per year - Fall and Spring semester	Program Coordinators coordinate observation dates with building administrators and communicate those dates to lead mentors (one in the Fall, one in the Spring)  Lead mentors coordinate observations for mentees - these observations are intended to give mentees opportunities to see staff members in similar roles

## Creation of an Institutional Plan for Well-Being

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### Abstract

The incidence of mental health issues such as depression and anxiety are increasing with the college student population, and they can impact students' academic performance. In response, some institutions have adopted a holistic approach to address undergraduate students' well-being. Well-being refers to thriving and fulfilling one's potential yet some well-being skills such as gratitude and optimism have also been shown to reduce mental health issues. I created an institutional plan for promoting undergraduate students' well-being that was built on five dimensions of well-being. The dimensions are social (development and maintenance of healthy relationships), physical (behaviors that improve physical health), emotional (ability to understand and effectively process emotions), environmental (quality of the physical spaces and how actions impact them), and financial (use of skills to manage personal finances). Emphasis of the paper is on the process of creating the well-being plan, which relied on collaboration, starting small, aligning evidence-based practices with institutional need, and developing a curricular component. Ideas for rolling out the program to the institution are discussed as well.

*Keywords:* well-being, wellness, mental health, institutional planning.

College life presents an opportunity for young adults to develop in healthy ways that can heavily impact their future professional and personal lives. Today's college student, however, is faced with diverse challenges to their development that include relationships, the college

transition, economic and social justice, and COVID-related issues (Abrams, 2022). Recent surveys of college students' mental health illustrate the various struggles they face. Survey results from the Healthy Minds Study (Eisenberg et al., 2024) indicated that 38.0% of college students reported moderate or severe depression, 34.0% reported moderate or severe anxiety, and 67.0% reported they felt left out and isolated from others some of the time or often (p. 5). Similar data from the American College Health Association (ACHA, 2024) survey found that 48.5% respondents reported loneliness, 19.5% reported serious psychological distress, and 76.4% reported moderate or high stress in the last month. Relationships were another source of struggle from the ACHA (2024) survey, as 25.7% of respondents reported issues with their roommate/housemate, 36.9% with their intimate partner, and 36.9% with family members (p.13).

The incidence of depression and anxiety-related issues with college students are on the rise. According to the Center for Collegiate Mental Health (2023), depression (+.23), social anxiety (+.32), and generalized anxiety (+.29) have risen noticeably in a 13-year period from 2010–2023 (p. 13). Mental health-related issues have also been shown to negatively impact academic performance. Data from the Healthy Minds Study (Eisenberg et al., 2024) illustrated that 77% of college students reported that emotional or mental struggles impacted their academic performance for at least one day in the last month, 45% reported that it impacted at least 3 days, and 21% reported that it impacted at least 6 days (p. 6).

The rise in mental health-related issues has led to an increasing demand for traditional counseling services that some counseling centers have had difficulty meeting. This has led to some institutions creatively addressing how to meet the growing mental health needs of their students (Abrams, 2022).

### **Toward a Different, More Holistic Model**

Fostering student mental health has traditionally focused on addressing the presence of issues that are negatively impacting daily living. Counseling centers are the primary on-campus service provider once an issue(s) has been identified and students are willing to seek out services. The dynamic has recently shifted toward a more proactive, holistic model of student health from a diverse group of institutional stakeholders to balance out the counseling-centric approach. This perspective is exemplified by a statement signed by the National Intramural and Recreation Sports Association (NIRSA). “We believe it is time to transcend reactive, siloed, programmatic approaches to health and establish foundational, proactive, well-being initiatives for the campus community” (National Intramural Recreation and Sports Association, 2025, para. 1). Fifteen other participating national organizations representing various organizational stakeholders including, the American College Health Association (ACHA), American College Counseling Association (ACCA), American College Personnel Association (ACPA), College and University Professional Association for Human Resources (CUPA-HR), National Association of Colleges and Employers (NACE), and National Association of Student Personnel Administrators (NASPA), have signed this statement.

Different sets of institutions have come together in the last decade with a common goal of promoting a holistic health approach in higher education. For example, the U.S. Health Promoting Campuses Network (USHPCN) was created to support institutions of higher education in the U.S. develop frameworks and infrastructure for promoting holistic health at the individual and community levels. Its goal is to promote the Okanagan Charter, created in 2015, so that higher education institutions could formally adopt a pledge to do two things:

1. Embed health into all aspects of campus culture, across the administration, operations, and academic mandates.
2. To lead health promotion action and collaboration locally and globally. (Okanagan Charter: An International Charter for Health Promoting Universities and Colleges, 2015, p. 3)

There are currently 32 institutions—a community college, colleges, and universities—that have adopted the Okanagan Charter. Member institutions meet to generally provide support and share successes and challenges in order to optimize implementation strategies and ongoing assessment. Collaboration between The Wellbeing Project, University of Virginia, and Stanford University led to the creation of The Wellbeing, Innovation, and Social Change in Education (WISE) Network where institutions of higher education in the U.S. and beyond share innovations in promoting student well-being within the context of promoting social change (Chima & Germano, 2020).

### **Wellness and Well-Being**

Modern views on wellness can be traced back to the pioneering work of Halbert Dunn, who was Chief of the National Office of Vital Statistics at the U.S. Department of Health. His groundbreaking conceptualization of health went beyond the disease model and included what he termed “wellness.” Dunn (1957) wrote:

The goal of health now at mid-century calls for not only the cure or alleviation of disease. It calls for even more than the prevention of disease. Rather, it looks beyond, to strive for maximum physical, mental and social efficiency for the individual, for his family and for the community. (p. 225)

Hettler (1980) was another pioneering figure in this area, and he defined wellness as an “active process through which the individual becomes aware of and makes choices toward a more successful existence” (p. 77). His work directly led to the current model of wellness proposed by the National Wellness Institute (2023, 2024), whose core component of wellness focuses on living an optimally healthy life. It includes six dimensions along with their general areas of focus:

- Intellectual—learning and personal growth
- Occupational—meaning from work, academics, volunteering
- Spiritual—exploration of life and the universe
- Physical—taking care of physical health
- Emotional—self-awareness and self-regulation of emotions
- Social—connection between the self, and community and nature (p. 3).

Mainstream psychology has made considerable advancements over the last couple of decades developing the concept of well-being, which I summarized to refer to a state of flourishing that is achieved through influencing five core dimensions of well-being: positive emotions, healthy relationships, engagement, meaning, and accomplishment (Seligman, 2011). This philosophy of “thriving” aligns with Dunn’s (1957) and Hettler’s (1980) “thriving” focus and is fundamentally separate from reducing the incidence and/or intensity of symptoms associated with mental health issues. However, some skills that have been shown to improve well-being can also improve mental health issues such as depression, (Maddock & Blair, 2023; Wolfe, 2021). Thus, creating a well-being program can complement a counseling-centered approach to addressing mental health by teaching evidence-based skills that can improve well-being and select mental health issues.

### **Creation of the Institutional Well-Being Program (WBP)**

Given the trend toward adopting more proactive, health-centered programming to complement counseling-related efforts on various campuses in the U.S., I aimed to create an institutional plan to promote New England College's undergraduate students' well-being. It made the most sense to use the term well-being as opposed to wellness because wellness more represents an emphasis on medical and mental health services at the institution. I thought that it would be confusing at some level if I tried to re-brand the term "wellness" on campus. I also felt that I would encounter unanticipated issues when developing and rolling out the program, so simplifying the process at every turn was important. Thus, I used well-being to represent an emphasis on supporting students' flourishing, which can also benefit students' mental health issues.

The three biggest factors that laid the foundation for the Well-Being Program (WBP) were starting small, collaborating as much as possible, and aligning evidence-based practices with institutional needs. A fourth important factor of developing a sequenced curricular program emerged during program development.

Starting small was important because I did not want to put additional work onto colleagues' schedules with initiatives that would be part of the WBP. I planned to carry out a small set of new initiatives to start the program and notice if others wanted to participate over time. So, I needed to be realistic about what programming would be included in the early stage of the plan. I created an exhaustive plan and then identified programming that would best address institutional need, show value, and build resources over time with the ultimate goal of embedding well-being into all levels of the institution.

Collaboration throughout the entire process was critical in order to achieve two goals:

- Understand well-being from multiple institutional perspectives
- Identify areas of need

It was important to understand what well-being meant within the confines of the institution by hearing the voices of students, staff, faculty, and deans. Students, faculty, and deans were polled with similar mixed-method questionnaires (see Appendix A and Appendix B) about what well-being meant to them, ways in which they promote it, and institutional barriers/roadblocks to well-being. I spoke with various staff members to understand what well-being meant to them and how that translated into the type of work they were doing with students.

Data from the surveys and staff conversations produced a clear picture of basic areas of well-being that were important to the institution. These basic areas, called dimensions of well-being, provided the foundation for the WBP with the description informed by my general knowledge in Psychology and the National Institute of Wellness (2024):

- Social—development and maintenance of healthy relationships
- Physical—behaviors that improve physical health and minimize a negative impact on physical health
- Emotional—ability to understand and effectively process emotions, and behaving in ways that promote healthy emotional expression
- Environmental—quality of the physical spaces we inhabit, and how our actions impact them
- Financial—understanding personal finances and use of skills to manage them

I started this process thinking that areas of need would be gaps, or areas where there was not the necessary programming to support the dimensions of well-being. Conversations with staff led to the realization that they were sponsoring programming that students recognized as

supporting their well-being. Thus, identifying areas of need also included how to best support the robust existing programming for students' well-being. Providing this support could be done mostly remotely via email and meetings compared to the "in person" commitment required to implement new initiatives on campus, which created an additional layer to the WBP.

It was important to select specific, evidence-based skills to address major areas of programming that came from an analysis of data from students, staff, faculty, and deans. For example, socialization opportunities was a major theme that emerged from the data. From this I identified social connection as a critical area of programming. Social connection refers to a minimum amount of quality relationships where there is reciprocal concern for another's welfare. (Baumeister & Leary, 1995, p. 497). This conceptualization of social connection aligns with it being a fundamental human need (Baumeister & Leary, 1995, p. 497). Given the issues surrounding depression, loneliness, and healthy relationships with college students (American College Health Association, 2024; Center for Collegiate Mental Health, 2023; Eisenberg et al., 2024), developing programming focused on social connection fit very well. Gratitude can play a pivotal role in forming healthy social connection (Algoe, 2012; Bartlett et al., 2012; Tsang, 2006) and lowering stress and loneliness (Bono & Sender, 2018; Hittner & Widholm, 2024; Kurian & Thomas, 2023; Zhang & Tsai, 2023), serving as a great example of how some well-being skills can also impact symptoms associated with mental health issues.

It became clear to me during program development that there was a need to create opportunities for students to engage in sequenced programming while ensuring they would have the time to consistently attend. I have found that it is difficult to achieve this consistency with co-curricular programming because of a lack of a clear schedule into which to place specific well-being experiences, so I added an academic component to the well-being program.

A micro-credential program is an academic option that fits well with the WBP because it provides opportunities for students to build well-being into their academic lives and for students to develop various skills associated with all five dimensions of well-being. Students would be able to apply their classroom learning to a diverse set of practical experiences, reflect on those experiences, receive feedback, then continually practice them in various ways. Four added benefits of a curricular component to an institutional well-being program are that it (a) creates a more balanced, robust well-being program by emphasizing certain aspects of well-being dimensions that are not covered as much with existing or newly proposed initiatives, (b) adds a unique, diverse component to the academic offerings, (c) helps with marketing the well-being program, and (d) provides balance to assessing well-being program effectiveness with co-curricular programming.

### **Rolling out the Well-Being Plan**

The WBP has yet to be implemented at the time of writing this article. Thus, everything below is a proposed plan without any comments on its relative success.

Effectively rolling out the WBP is almost as important as creating it, and it requires different approaches to different entities at the institution. But the overarching theme is to find a group of interested students, staff, and faculty who would be advocates for the program by discussing it with their peers.

I believe that a critical piece to marketing the program effectively is having a clear webpage so that everyone can access the information at their leisure. It was important to contact the administration early in the process to gauge support for the initiative. The administration was supportive which is a good first step to creating a webpage on the college website. Thus, part of the plan was a detailed outline of the webpage.

Administration, faculty, and staff will be emailed about the program along with a link to the well-being webpage. I am also creating a monthly drop in, open faculty and staff meeting about well-being.

The core elements of the marketing plan for students are marketing the micro-credentialing program and starting the well-being club. Students can access information and insights about various majors and minors at the college through our advising office and through faculty advisors. Some students are able to learn about the WBP during advising sessions and are able to read about the micro-credential program that includes a link to a full description on the college website.

The well-being club was created to be an option for promoting students' social and emotional well-being. Students in the well-being club will be advocates for the WBP by talking with friends, and marketing and hosting club events throughout the academic year. This is perhaps the best way to involve students as advocates for the program who would educate their peers.

### **Conclusion**

The rise of mental health issues with college students has forced some institutions to think about how to meet these needs. One such option is a proactive, well-being institutional program that aims to improve individuals' flourishing which can also help manage some mental health-related issues. By utilizing a data driven and collaborative process, I created a feasible, robust plan to promote student well-being. Creating an effective plan to educate the college community was also a critical piece that should accelerate the timetable for observing positive results from the program.

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**Making It Work for Students in Wheelchairs to Leave Home:  
Experiences and Decision Making Regarding the Residential College Experience**

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**Abstract**

Students with disabilities attain a 4-year college degree at only 12.5% of the national average. By studying the intersection of inclusion, higher education, and disability studies, my capstone explored a subset of this dilemma to focus on wheelchair users' decision-making process about where to attend college and their subsequent time at college. In this capstone I adhered to the American with Disabilities Act (ADA) of 1990's definition of a disability as "a person who has a physical or mental impairment that substantially limits one or more major life activity." A wheelchair user will be defined as a person who expected to and did use a wheelchair in college as a necessary vehicle of independence. Interviewing nine students who used wheelchairs—living with Spinal Muscular Atrophy (SMA), Muscular Dystrophy (MD), or Cerebral Palsy (CP)—and graduated from an American college or university in the last ten years revealed wheelchair users' tremendously complicated decision-making and experiences in college along with aspirations they shared with other college students. Confounded often with a heightened need for students in wheelchairs to attend college to gain a sense of independence they may especially lack due to their disability-related dependence, this capstone is critical in making a supportive college experience possible. This research will hopefully inform policy recommendations related to care, accessibility, and inclusion that supports students in wheelchairs by minimizing disability-related burdens.

*Keywords:* equity, university access for students with disabilities, wheelchair access, residential life, disability related dependence and independence

Research corroborates that students in wheelchairs face pervasive disadvantages in college (Fitchen & Amsel, 1998). While the number of students with disabilities is increasing over time to keep pace with a growing American population, the opportunity gap (e.g., graduation rates, enrollment rates) between non-disabled and disabled students has remained stable (Toutain, 2019; Pendharkar, 2023). Relatedly, research has found consistent under-matching—a phenomenon in which well-qualified students attend selective schools at disproportionately lower rates—of students with physical disabilities in attaining higher education (Hudes & Aquino, 2019). Even when adjusted for institutional selectivity, studies find that “students with disabilities undermatch at a greater rate than the overall studied sample,” suggesting a gap between the ability or commitment to earning a higher education and actual enrollment rates (Hudes & Aquino, 2019, p. 180). There is a clear disparity in the potential and actualization of potential related to a college experience for students with physical disabilities.

For many, the process of solidifying logistics for going to college is simply too much, and the anxiety does not justify the risk (Fichten & Amsel, 1998). Logistics often include moving medical equipment and medications to college, finding healthcare providers, and being able to adequately set up a college space that meets the student’s needs (Fichten & Amsel, 1998). Once a student is at college, accommodations are often insufficient to support student success (Losinsky et al., 2003). The 360-degree logistical set of needs students in wheelchairs have require enormous amounts of coordination among stakeholders (e.g., healthcare providers,

administration at college institutions, caregivers, educators, parents) that are often overwhelming for students to navigate (Olumolade, 2021).

For many students in wheelchairs living away from home for the first time, care consists of a 24/7 home health aide who assists in daily acts of living (ADLs) such as changing, getting out of bed, using the bathroom, and eating. In fact, disability rights scholars acknowledged that for many students, access to 24/7 care is a fundamental necessity, and without such care, most people with severe physical disabilities find it almost impossible to attend and graduate from postsecondary degree programs (Stumbo et al., 2009). Yet, the costs of care are tremendous and often unaffordable for even middle-class families, with a 2015 study finding that the median average cost of a home health aide is \$54,912 annually, which was 80% the median middle-class annual income in 2019 (Genworth Cost of Care Survey, 2015; Vega, 2021). The strain (e.g., economic, opportunity, health) this puts on entire families is undeniable.

The all-encompassing complexity inherent in the college process—from application to graduation—makes the decision to attend a residential institution or live at home for college not a choice, but a simple reality check for many students. Residential institutions are meant to instill a sense of autonomy in students that prepare them for adulthood (Mulder & Clark, 2002). In many ways, these needs are elevated for students in wheelchairs who may have been previously unable to access feelings of independence due to their disability (Landre, 2021). Among many student-reported benefits of living at college, some included “encouraging students to take risks and learn how to fail” and “providing cross cultural experiences” (Bryant, 2014, para. 5 and 6). Based on my interviews and literature review, I have concluded the ability to have an experience that contrasts the sheltered environment of home is invaluable and oftentimes something that only a residential college experience provides for wheelchair users.

The stakes for students in wheelchairs are high and unavoidable. One in five students with any disability report never receiving accommodations for which they are approved (Stumbo et al., 2009). At the same time, studies show a direct positive correlation in grade-point-average and the uptake of accessibility accommodations, suggesting that students in wheelchairs are able to thrive when adequately supported (Schreuer & Sachs, 2014). More broadly, supporting students in wheelchairs throughout their time at college achieves a wider good and reverberates for students across the university. Schreuer and Sachs (2014) found that effective accommodations not only improve individual outcomes—such as academic performance and satisfaction—but also enhance the overall institutional climate. Their research highlights how inclusive practices contribute to a more supportive and equitable learning environment for all students. Consistent with the Universal Design for Learning, education can be accessible when adequately altered in its delivery and assessment based on need—creating systems that allow students with disabilities to share their experiences and voices with non-disabled peers, which encourages growth for all students by promoting diversity on campuses (CAST, 2025).

My research centered on students in wheelchairs' experiences and voices to give them agency in promoting support structures that let these students flourish in college given complex considerations, needs, and experiences. This was a departure from the dominant narrative that merely underscores the failures of systems and circumstances that prevent these students from crossing the finish line. By interviewing nine students who used wheelchairs while attending a college in the United States in the last decade, I found that wheelchair users have uniquely complicated college experiences related to managing medical needs, social life, and academic rigor. Given that these students also emphatically stated that a residential college experience is invaluable—especially for wheelchair users who may have been deprived independence

otherwise—the results from this study have led me to vigorously recommend more comprehensive support structures especially related to care and accessibility to ensure that a residential experience is an option for all wheelchair users.

### **Methods**

For this study, nine people, who had used a wheelchair and who graduated from a U.S. college in the last 10 years, were interviewed to understand the unique complexity of experiences, considerations, and decision-making that these students in wheelchairs accessing higher education faced. As a wheelchair user with SMA in college myself, I was able to intimately empathize with many of the participants' experiences; I believe that having this shared identity allowed participants to feel more comfortable in being vulnerable and openly sharing their experiences. After gaining approval from Yale's Institutional Review Board (IRB), interviewees were recruited via social media (Facebook and Instagram) and direct messages (email, text, direct messages on social media). Interviewees represented a snowball sample consisting of people with various forms of MD and CP from a summer camp I was part of dedicated to children with MD, patients from the SMA Clinic based at Columbia Hospital, Yale, and Facebook (Parker et al., 2019). The interviews ranged from 30 minutes to an hour and were conducted through Zoom; recordings were kept on an audio recording app on an iPhone and anonymized via only using participants' initials. After completing all interviews, I manually coded interview transcripts (transcripts via Otter.ai) for key reoccurring words (e.g., "care," "distance," "accessibility," "family"), which I used to thematize topics to organize my analysis (e.g., social life, care, health).

Interviewees were diverse with regard to gender, type of institution (e.g., college versus university, recognized prestige, size of institution), hometown region of the nation, and their

residential versus commuter status (see Table 1). The institutions that were included in terms of commuter participants included: City College of New York, Montclair State University, Moravian University, and Ramapo College. The institutions in which the student participants were residential students included: Georgetown University, Harvard University, Sienna College, Stanford University, and the University of Arizona.

**Table 1***Participant Demographic Data*

Demographics	Categories	
Gender*	<u>Female</u>	<u>Male</u>
	4	5
Hometown Region*	<u>Northeast</u>	<u>South</u>
	7	1
		<u>West Coast</u>
Institution Type*	<u>College</u>	<u>University</u>
	3	6
Student Type*	<u>Residential</u>	<u>Commuter</u>
	6 Residential	3 Commuters
Prestige of Institution**	<u>Top 30</u>	<u>Under Top 30</u>
	Colleges 2 Universities 3	Colleges 1 Universities 3
Size of Institution***	<u>Less Than 6,500 Undergraduate Students</u>	<u>More Than 6,500 Undergraduate Students</u>
	Colleges 2 Universities 1	Colleges 1 Universities 5

*Note:* \*Data from interviews; \*\*Data from US News World Report 2025; \*\*\*Data from institution websites

Importantly, in considering the characteristics interviewees, two limitations ought to be acknowledged: geographic and racial diversity. This study was limited in geographic diversity with regard to interviewees' hometowns; though interviewees collectively represented three geographic regions of the United States, a disproportionate number of interviewees considered the Northeast their home. This is likely because most of the personal connections I had were from the Northeast as I am from New York and attended the Muscular Dystrophy Association camp in New Jersey, where I met many of the study's participants. Another limitation of this study was limited racial diversity: all interviewees were White. Both of these limitations undoubtedly hindered my ability to gather completely holistic and diverse experiences and perspectives. Finally, socioeconomic status was not explicitly asked, though most students noted paying for care as a significant barrier in attaining higher education. Nonetheless, given the small sample size of the study and specific parameters of the study, limitations in the sample are not completely surprising though important to consider in evaluating this research.

### **Findings**

Interviews of residential and commuting students revealed that wheelchair users faced uniquely complicated considerations, decisions, and experiences that necessitated more policy-based support—specifically related to care and accessibility—to maximize the potential for a fulfilling college experience. All interviewees were “confident” in their decision to attend college to some capacity. Factors contributing to the decision of where to attend college slightly differed between commuting and residential experiences. Students who left home for college believed a residential experience was completely critical and thus committed to the “extensive planning” (Louis) that would be required and accepted limiting factors, such as climate, in their decision-making process. For students that commuted, care was too vital to sacrifice, and leaving

home was simply not a possibility in their circumstances. However, for all students, finding and paying for care remained the paramount “stressor” throughout college. Socially, all students noted physical accessibility as a barrier to socialization and felt forced to assume extra vulnerability in forging relationships, while commuting students noted a more limited college experience socially since they could not fully immerse themselves into the social aspect to the college experience. Finally, when asked to evaluate the experience of balancing the academic, physical, medical, and social needs of college in a wheelchair, all students expressed that doing so was “incredibly taxing” and mandated tremendous amounts of “self-advocacy” (Delilah).

Ultimately, and perhaps most importantly, all students believed a residential college experience was worthwhile despite facing significant challenges, encouraging future students to find ways to make one possible. Commuters, such as John, felt their college experience lacked its “full potential socially” and with regard to fostering independence, residential students, such as Delilah, overwhelmingly felt the residential experience—and all the relationships, memories, and independence that came with it—was “worth the challenges” to obtain it. Thus, interviews collectively revealed that students in wheelchairs must have more comprehensive support—especially related to care, transportation, accommodations, and social activities—to lessen the burden of having a residential college experience, which clearly is invaluable yet sometimes out of reach for students who use wheelchairs.

### **The Decision to Go to College**

All of the students interviewed were highly motivated to attend college either on the basis of familial expectation or disability—none had even considered foregoing a college education. For Robert, “college was just the expectation; I was 100% going to college, it was just a matter of where.” Louis mentioned that “college was assumed in my family, that had nothing to do with

disability;” while Gregory added, “college was just cultural in my family.” Not going to college was out of the question for these students. Thus, though socioeconomic status or familial education status were not explicitly requested, several students made clear that college was simply a family expectation that they needed to meet. Like many students across the United States, college was simply part of the growing up process that their community had for these students after graduating from high school.

For other students, their disability dictated the decision about whether to attend college, where to attend college, and whether to attend college as a residential or commuter student. Delilah knew she wanted to be independent after college, and knew that if that were true, “care would be expensive; if I wanted to work at all, I would get no financial help to pay for care.” Given Medicaid’s threshold laws that require an “incredibly low income to qualify for compensated care,” Delilah knew she would be paying out-of-pocket if she worked at all. Thus, she knew she wanted to attend a college that was well-recognized enough to help her get a high paying job. Relatedly, Susan understood that logistically, “as a disabled person, I knew I needed a college degree to do most jobs I could physically do.” In her mind, most jobs that did not require a college degree involved physical labor, which simply was not an option for her. Ultimately, though for differing reasons, the decision to go to college was unquestioned and felt important.

### **Factors Contributing to a Residential or Commuting Experience**

While all students were committed to earning a college degree, the decision to live at home or at college ultimately came down to a difference in how interviewees weighed factors of independence, care, their related costs, and distance from home. The calculus was different for each student, often motivated by family and financial resources. All college residential students

believed that a residential college experience was highly important for independence. Delilah noted about her lack of independence, “I had never had that my whole life, this was a real step towards adulthood after my mom doing all of my care.” All residential students shared the sentiment that due to their disability and thus physical dependence on their parents, having the experience to live independently was even more “critical” than for most of their peers. In fact, Delilah felt so strongly about making a residential college experience possible that after being admitted to the institution she ultimately attended, she used her Make-a-Wish Foundation wish to visit and ensure that living on campus was physically possible. Like many students applying to college, living at college was important as a stepping stone towards adulthood; yet, for these students, that need was heightened due to a life of dependency prior to college and ensuring doing so could be a reality took extra effort, time, and cost.

To make the ardent prioritization of a residential college experience possible, all students noted the need for a highly complicated planning process to meet their medical needs, starting with weather. In fact, most students considered climate a “make or break” factor that largely dictated choices about where to attend college. For Robert, “warm weather was the determining factor.” Similarly, Gregory only looked at universities with a “warm and dry” campus. Thus, for some students, weather completely decided the set of schools to which they applied. For Susan, even if not the sole factor, weather was also at the top of her considerations in choosing where to apply to college; in fact, she decided to apply nowhere north of New York City given she could not put on a jacket independently. To Susan, a warmer climate led to independence, and independence was “absolutely essential” to her college experience.

In addition to climate considerations, students also noted the financial planning needed to pay for care in college, forcing 17-year-old students to navigate a complicated healthcare

reimbursement system—Medicaid. Importantly to note, care is essential for college students who use wheelchairs to live independently; all interviewees required personal care assistants (PCAs) for many hours of each day to assist in activities of daily living (ADLs). For Delilah, she found that applying for Medicaid took months to receive approval. The process was so intricate that when asked to give advice to future students in a similar situation, she said, “I’d provide a crash course on Medicaid.” Similarly, Susan battled with Medicaid to get care for months leading up to college. She ultimately needed to read through Medicaid’s entire administrative code after being told she could not receive care out of state. While her peers were enjoying their last summer before college, she was reading legal documents and anxious about whether her care would get covered until 3 weeks before school. Similar to Susan, when asked what advice she would give to prospective college students in wheelchairs, Delilah said, “Start early with coordination—you can’t coordinate it in summer before college like everyone else, start at least a year in advance.” Thus, the commitment to attend a residential college experience was matched with a lengthy list of unique considerations and stressors for students in wheelchairs.

Importantly, commuting students shared care as a key consideration in decisions about attending college, so much so that it dictated their decision to stay at home for college. Prior to college, all interviewees’ families—primarily parents—had done all of their care. For Louis, like others, the “unknown was scary and uncomfortable. I wasn’t willing to do it.” Similarly, John noted he just “didn’t feel comfortable leaving home and having other people do his care.” Parents providing care added a source of comfort and stability that some students were not willing to risk. For example, Louis recalled “horror stories” of people in similar situations being “left in bed” or “not able to use the bathroom” if their caregivers would not arrive on time. For others, having anyone but one’s family members provide care simply was not an option

financially. Amanda noted that “it would have cost too much to have aides full time and would have been too much coordination, it just wasn’t an option.” Thus, for some, the logistical challenges compounded the emotional and physical security that familial care provided to make leaving home seem unrealistic. Additionally, for many, the distance from home and care were intrinsically related. For George, he “knew I needed my mom to drive—the Paratransit system was really bad” and thus attending a school that his mother could easily drive to was critical. Similarly, for John, “it was easier to care for me at home than stop on the way from work.” Thus, being close to their care resources—family members—was essential and anything but that was infeasible.

When asked to consider if students had considered going away for college, commuting students unanimously communicated that doing so was not truly a choice given the gravity of the stakes they were facing. For some, the decision to stay at home was made far before even looking at schools. George noted that given his prognosis was originally that he would die before the age of 18, “being alive was the reason I went to college” and thus the prioritization of a residential experience was quite low. Finally, John actually did attempt to attend college residentially—he lived on campus his first semester—but found it nearly impossible to manage his care needs with his parents who would come before and after work to assist him. Thus, commuting students often felt that ultimately, their care and physical wellbeing just mattered more than a residential experience and living at home was just a necessity.

### **Care as a Constant Stressor**

The plight of securing care continued through college for all students, with all students attributing securing care as the greatest unique stressor to their college experience. For all students except one, families provided some—if not all—care in college, and that consequently

complicated much of the college experience. Ultimately, challenges related to care were heightened for residential students, such as Susan and Delilah, who felt they needed to become “experts” on Medicaid reimbursement policies, or other students, like Gregory or Susan, who felt they must “choose” between “straining” familial relationships or lack the necessary support via part-time aids.

For residential students, the most straightforward option was often having a parent move to college with their student to provide care. For five of the six residential interviewees, a parent provided care for some of their college experience. This was draining, emotionally fraught, and simply less than ideal for all members of the family. Students felt conflicted. On one hand, students were grateful for their parents and understood the significant sacrifice parents were making to support their child in having a residential experience. At the same time, having a parent provide care added to the abnormality of a first-year experience for a student in a wheelchair. Emily noted, “I was in college and didn’t want my mom there.” Similarly, parents had to adjust to their child becoming an adult in college. Gregory recalled an argument with his father during one of his first few weeks of school in which “my dad got mad one day because I was out until 2 a.m., and my dad was waiting to take care of me. After that, I didn’t ask parents for help.” Contention arose from the uncomfortable blurring of boundaries in parent-child relationships, leading to lasting strains on relationships. One negative step further, Delilah noted that her first semester of college was “one of if not my darkest periods, I had a really challenging relationship with mom; it was weird to feel like I was at college but with my mom, so I was fighting with mom every other day.” Parents cared for their children out of necessity, which came at the cost of challenging students’ mental health and relationships with their parents.

Finding care outside of the family was also challenging for students in wheelchairs, adding even more stress to an already stressful transition to college. Generally speaking, colleges did not provide any assistance to students seeking care. In some cases, they even hindered the process. When Emily sought to post job descriptions throughout her dorm, her institution forbade her from doing so by using privacy as a justification; this forced her to outsource care using Care.com and a nursing agency when it would have been preferable—logistically, financially, socially—for her to use care within the college. Even when care was easier to find, it was not a straightforward experience; for example, Robert’s aide moved in with him and they shared a single room with two beds. Despite being grateful for his care, Robert noted that this made socializing difficult. In another situation, a student shared an aide with another student in a wheelchair, “which really wasn’t great” due to conflict of interest and social reasons. Care conditions were suboptimal.

Yet, in some notable instances, colleges did help find care for students. Gregory communicated that his institution actually paired students with disabilities who needed care with other undergraduate students studying medicine. While this program was extraordinary in helping establish care, it still came with social difficulty. Gregory mentioned that having an undergraduate provide his care was challenging given that they were inherently “untrained to provide such intimate care” for their peers, which at times led to uncomfortable relationships. Clearly, finding care was challenging and tumultuous for each student.

Regardless of how care was established, it took a colossal amount of effort, time, and energy from students. As Susan described, “managing my care was a part-time job, and adjusting to an environment of trusting that someone will show up was hard.” While other students had part-time jobs on campus they got paid for, students in wheelchairs spent that same time and

energy merely organizing essential care. Additionally, relying on other people for survival took immense trust and, at times, blind faith. Emily added to this by emphasizing the emotional difficulty inherent in the process; “the idea of not having aides is really scary, I am so reliant on them.” Relying on strangers for survival added significant fear and insecurity to an already tumultuous period for any student starting college.

Commuting students also had to rely on strangers. Louis remembered “sending messages to freshman year class about [his disease] asking if anyone who would help get him lunch.” Additionally, he remembered “his head falling during the first week of class and having to ask a stranger to pick it up.” Similarly, commuter George recalled “always asking the person next to me to help get out a book or notebook; having to be on my own but rely on other people forced me to be independent.” For these students, meeting basic needs that most students never think about required discomfort, foresight, trust, and vulnerability on a scale beyond comprehension for many. Other times, students quite literally went without meeting their care needs. One commuting student mentioned “not using the bathroom while on campus,” while another recalled “waiting hours in the snow and rain” or being stuck on campus when the paratransit system was slow or when class suddenly got canceled. Ultimately, the process of setting up and managing care was very difficult for students and their families from a logistical and emotional standpoint, regardless of where they lived.

### **Physical Inaccessibility Limiting Social Interaction**

With regard to students’ social lives, all students pointed to physical inaccessibility as a major stressor in having a completely fulfilling social life. The examples were dishearteningly numerous. For example, Emily recalled going to a basketball game and having to sit in isolated seating away from peers. To Emily, the main reason to attend this event was to make memories

with friends, so being deprived of that was upsetting. Socially, Robert rushed a fraternity but could not physically live there, given the house's inaccessibility, preventing him from becoming as close to his peers as he knew he would be if he lived there. In another instance, Delilah recalled a major university-run assembly in the fall of her first year, in which her dorm was assigned to sit at the top of a staircase. The university had blatantly made it impossible for the students described above to fully participate in organized events.

Student-organized events ostracized wheelchair users, too, given physical inaccessibility. For example, Robert often found himself in the corner at fraternity parties; "the guys were welcoming, but at the same time, parties were compact, which was difficult to physically navigate and not conducive to a wheelchair." Even when others were open-minded, physical spaces isolated students in situations in which they sought to attend. Similarly, Susan very explicitly recalled "social isolation due to physical inaccessibility." She described being invited to parties in inaccessible apartments, which she found challenging to navigate; on one hand, she was thankful to be invited, but on the other, she felt like she was not truly invited, given the thoughtlessness related to inclusivity. In one instance, after repeated instances of this exclusion grounded in inaccessibility, Susan dropped a club "out of self-respect" after being made aware that the club had accessible options to host spaces but simply chose not to. Less overtly, Gregory recalled having to spend hours of—limited—free time scoping out bars and restaurants near campus that were accessible, creating a list of places he could access. Yet, one day, one of his friends—not thinking about accessibility—wanted to go to a bar not on that list. Gregory did not want to be the reason people did not go out, so he simply made an excuse not to go. In another instance, Gregory was invited to a rooftop party at a location that *was* on his list. When he got there, the building manager refused to give him a key to the lift since he was not a resident;

Gregory had to turn around and go home. Similarly, at one institution, Final Clubs represent a major social activity in which upperclassmen often take part. Yet, Delilah could not even go through the process of Final Clubs, given that she could not physically enter the houses, forcing her to get coffee with the Finals Club President instead of mingling with her peers as the normal process would dictate. In all of these instances, physical inaccessibility fueled exclusion for students in wheelchairs, which compounded the already stressful experience for these students.

Commuting students also faced barriers to social interaction from physical inaccessibility, which when compounded with living at home resulted in a limited social experience. Primarily, students pointed to missing out on activities related to orientation, nightlife, and events requiring flexibility. For example, Louis mentioned many “freshman orientation activities that I couldn’t participate in because they were physical, so I would go home and miss out on connection building time.” Amanda added to this narrative by mentioning missing out on a “lot of get-to-know-you meetings” and “orientation activities that often included physical movement like bouncy castles, yard games, corn hole, etc.” that the college had sponsored for students, but were simply “out of the picture” for commuting students, either due to living at home or their disability. Universities did not design social events with disability in mind. For many, this effect was reinforcing; an event was inaccessible, so they would go home, which would discourage or prevent them from attending more activities, etc. Additionally, nightlife activities—a cornerstone experience for many college students—were often out of reach for these students. For students whose parents primarily drove them, all nightlife activities were not even discussed, given their parents did not want to drive late at night, or students felt uncomfortable with their parents taking them to parties. For others, nightlife parties were simply inaccessible. For example, Louis remembered “[I] thought I’d participate in more of night life,

didn't really end up doing that—a lot of dorms weren't accessible.” Across the board, commuting students recalled feeling that “social relationships were a struggle.”

Another significant contributing factor was the inflexibility—due to care or transit schedules—that commuting students had when most college students function on flexibility. For example, John mentioned he “never hung out with people due to scheduling—every time I tried, something would go wrong; ACCESS-A-RIDE would come too early or too late.” This inability to be flexible with time contributed to limited extracurricular commitments. For example, John mentioned he would only partake in extracurriculars “in the middle of the day between classes, but did not consider doing anything at either end of the day” for transit reasons. Additionally, George noted, “if I wasn't in class, I was at home” and Louis noted that he just did not seriously consider joining many extracurriculars.

### **Forging Friendships and Greek Life**

Since physical inaccessibility clearly added an extra barrier to students wanting to form relationships, all students took extra initiative to forge relationships, perhaps more intentionally than most students. Most of the students in wheelchairs interviewed found their orientation groups and freshman dorms especially helpful places to find friends. This is likely related to the fact that having friends in one's dorm was more physically accessible and convenient, and that having a built-in network of people was easier to navigate than finding a completely new social network.

However, many students noted that the process of making friends took longer than they had hoped for or expected. Gregory strongly committed to forming relationships: he left his dorm room open for all of his first year and even bought chairs and tables from Target to “make my room the social room.” Ultimately, after realizing that joining an existing fraternity would be

difficult due to accessibility, he even “created [his] own with friends; [he] got a house on Greek Row and found a firm to build the frat.” This leap of faith and proactivity led to Gregory’s best moment of college, in which he recalls 600–700 students attending one of his parties. It was in that moment that Gregory “realized that no one cares if I can’t walk; the great equalizer is mentality.” This sentiment reflects the notion that many of the students interviewed commented on: “The world is designed to not have a wheelchair, so if you want a good experience, you need to make one your own experience” (Gregory). Despite this being unfair and creating a greater burden for wheelchair users, students in wheelchairs largely accepted and embraced this fact to make the best of it: they decided that the extra work and vulnerability was worth it. Similarly, commuter Amanda remembered feeling “sick of not being connected” and ultimately joined a sorority when her aide on campus—another student—joined the same sorority. She attributed her best moments of college to her sorority and noted how refreshing it was to “find people who didn’t think the chair was super weird.” Perhaps unsurprisingly, these students feeling the most comfortable in communities and moments that did not define students in wheelchairs based on their disability, but rather accepted them as a peer with a life that extended beyond disease. Ultimately, students in wheelchairs used the resources they had to make these experiences possible and “make it work” socially.

### **Consequential Tradeoffs**

Fighting for the support necessary to make a college experience—residential or commuting—doable took immense amounts of energy and sacrifice. Delilah thought of it as “a matter of survival” in which she had to consistently make tradeoffs to even make it through. Navigating college in a wheelchair caused her to simply not be able to put in as much time into academics as she would have liked to. Similarly, Robert never compromised on his physical

needs—skipping a 9:00 a.m. class when it took too long to get ready, use the bathroom, or stretch—but put social priorities ahead of academic priorities. On the contrary, Gregory “let my physical be the part that wasn’t working.” He forewent much of his physical therapy, stretching, and his medical care to save time and energy for other aspects of college. In all these cases, students made important decisions and sacrifices, yet those judgment calls differed in terms of priority among students.

Even still, students remembered being overwhelmed when getting sick. For many wheelchair users with SMA and MD, their musculature is weak, and thus getting a cold is often more severe—in some instances, life-threatening—and takes weeks or months, instead of days, to recover. Commuter Amanda recalled taking a “full course load for the first time, struggling with mental health aftermath of breakup, catching the flu on the last day of finals from being so run down, and I ended up in hospital for three months.” She continued to describe the constant struggle of choosing to do “homework or be social; I rarely had the energy to do both, also given I was squeezing in calls to Medicaid.” It was very clear that for Amanda, balancing all of her needs came at enormous costs and that she “constantly felt like I was grasping for straws; it was exhausting, I wouldn’t do it again.” The experience was traumatic and exhausting both physically and mentally. Similarly, Susan recalls falling and breaking her femur during the first few weeks of school, almost needing to take a leave of absence after missing so much school. In any case, students constantly had to make difficult decisions about how to manage their various and complex needs, and at times did not even have a choice when fate decided for them. Balancing competing needs—academic, social, physical—was simply too much to handle and had serious consequences.

### **Self-Reliance**

Self-reliance was a clear theme among all interviewees. Consequently, students almost unanimously agreed that full support could not be expected, but rather was created by students themselves. Robert accepted this fact as no one's fault, but rather that just "when you have such a severe disability, the school can only do so much." He did not think it was fair to rely so heavily on others and felt as if a lot of what it took to "make it work" truly was his responsibility. Commuter Louis added to this when referencing that the school he attended simply had "zero infrastructure to have a disabled student live on campus." Anecdotally, he recalls seeing that the disability office quite literally had stairs leading to the office; though the office ultimately moved, Louis noted this as a moment of clarity that the school was simply not able to support him. Louis thus took it upon himself to coordinate his care and decided that living at home was necessary for him to have the care he needed. Robert similarly noted, "support didn't come from all the same place; you have to leverage all the assets you have." Others agreed, with Susan noting, "I wasn't given support, I had to rip it out of various systems that were supposed to give it to me." Students fought to survive and thrive, and often did so without structures that were supposed to offer support.

Residential students' differing experiences with institutional support—specifically the institution's disability's office—also impacted their necessity for self-reliance. All students reported their college having a disability office but differed in their views on the office's helpfulness. For some students, their disability office was "fantastic and absolutely appropriate" (Gregory). However, for others, the experience was drastically different. One student described her university's office as a "nightmare. The office was one person, and it became apparent really quickly that the office's job was to protect [the institution], not students." In one instance,

Delilah asked if there were other students in wheelchairs whom she could be connected to, to which the University refused, despite her later finding out that there were several wheelchair users. In other instances, students were less critical of the office itself but rather the system at large. Susan described that “the office just had no power to handle physical concerns; the people who cared were powerless,” leaving her to deliberate with facilities while faculty at the disability office continued to turn over. Thus, even at their best, disability offices were often underfunded and lacked the capacity to make structural changes to support accessibility, leaving students to rely tremendously on themselves.

### **College Being Worth It**

Ultimately, and perhaps surprisingly, when reflecting on their experiences, students unanimously—residential and commuting students alike—emphasized the value of a residential experience. In doing so, they stressed a narrative of self-reliance and persistence while accepting that the college experience for students who use wheelchairs is likely different in some ways. All interviewees conclusively stressed that a residential experience is possible and worthwhile.

Comparing residential and commuting students’ advice perhaps most powerfully reflects the overlap among the two groups that emphasized possibility for a residential experience and vulnerability being worth it. Emily, a residential student, noted, “You have to go into it with an open mind; you’ll be independent, but you’ll still need extra help and that’s okay;” “Don’t doubt your ability to go to college—do it. Delilah expressed the feelings of all of the participants when she stated, “college is like ‘adult bootcamp’ for people with disabilities.” Robert put it this way, “There’s no avoiding uncomfortable moments and you just have to get through it. Go out, join a club, and get yourself out there; expose yourself and make yourself vulnerable to meeting new people and having new experiences.” To all of these students, a residential experience was

worthwhile—even more so for people in wheelchairs—yet required a certain degree of accepting risk, vulnerability, and understanding of the unique circumstances that wheelchair users face.

Commuting students shared the exact sentiment. Students ardently encouraged students, “Don’t confine yourself to home—you can be independent” (John); “Know it’s possible and find out how” (Louis); “Go out, do more, and have fun” (George). Thus, for commuting students, too, a residential experience was worthwhile—with regard to independence, being able to share in similar dreams and experiences as any other college student—the extra challenge and complexity.

### **Conclusion**

Ultimately, the college experience for college students who use wheelchairs was highly complex and involved important tradeoffs with which students had to grapple. In all of these cases, tenacity and acceptance of an inherently unique—and at times with extra challenge—college experiences were apparent. Interviews of college students in wheelchairs revealed several barriers and challenges that systems must address in future years to reduce barriers for students. These challenges included finding and paying for care; physical accessibility and climate of campuses; forging relationships; burdening familial relationships; and balancing medical, academic, and social priorities. Yet, at the same time, all students saw the value of a residential experience, inclusive of challenge. If commuting and residential students can already see a residential college experience as worthwhile, given the extensive and exhausting burdens that currently exist, creating more comprehensive support structures is only that much more important to make this experience as fulfilling as possible. Interviews revealed that future support systems and policies should focus on compensating care and creating networks for

students who wish to out-source care; accessible transportation; physical accessibility; and workshops on inclusion of students who use wheelchairs for non-disabled students and faculty.

Literature reviews and qualitative interviews from this research support the experiences of students in wheelchairs at the college level from an asset-based orientation by empowering students, listening to, and empathizing with students who largely have felt underserved. Interview data supplemented previous literature to emphasize that the multifaceted lived experience of students with physical disabilities must be centered in educational guidance and decision-making to ensure these students are afforded the necessary support to thrive in obtaining higher education. By providing a more comprehensive understanding of students in wheelchairs' experience, this research will hopefully lead to policies that are more responsive to student needs and allow colleges "to approach this not as a legal check mark but as a diversity initiative, otherwise schools are not providing a welcoming space for all students" (Samee Ali, 2020, para. 25).

Based on findings from this research, it is clear that making a residential college experience a viable option to students in wheelchairs is critical for feelings of independence and fulfillment but is often out of reach. Recommendations for colleges to consider in making a residential college experience possible include:

1. Providing remote options or excused absences to students with physical disabilities in bad weather or when sick. Multiple students noted weather being a factor in their college choices since the snow and rain can make it difficult to travel in a wheelchair, and people with physical disabilities are often at higher risk for illness in colder weather. Providing an attendance accommodation to students in wheelchairs if their

- unique circumstances make it too challenging to attend classes due to weather or sickness is critical.
2. Ensuring that accessible transport is available to students. The majority of students interviewed, specifically commuter students, noted physically getting to class was challenging as many students in wheelchairs cannot independently drive, open doors, or take out books from their backpack. Ensuring accessible transportation (e.g., Access-a-Ride) is available will be critical in supporting students' ability to get to class, especially in bad weather. Likewise, having a peer or aide available to help open doors, get materials from the student's backpack, etc. is important.
  3. Prioritizing plowing the paths for students in wheelchairs to classes or extracurricular engagements in snow. To help alleviate the need to miss class or extracurricular engagements as noted in number 1, paths used by student in wheelchairs should be prioritized by institutional ploughing teams in winter weather. This is already being done in at least two Ivy League institutions and should be widely adopted.
  4. Offering additional financial aid to students in wheelchairs so that proper care can be obtained. Finding and paying for care was a constant stressor for residential students, and not being able to do so was a key motivator in students in wheelchairs choosing to commute instead of reside on campus. Offering financial aid to students will allow them to find care that feels comfortable and safe, as comfortability with the source of care represented a main reason students cited for choosing to commute. This is similar to universities and colleges offering financial aid to low-income student to relieve the financial burden of attending college.

5. Ensuring physical accessibility of campus for all students. While ideally all campuses should be physically accessible, many are not, which students cited as a major barrier to social immersion. Recognizing the difficulty in fully making a campus accessible, schools should commit making legitimate efforts to ensure students with disabilities have their classes, dorms, dining halls, and college-sponsored extracurricular events physically accessible so that they can fully immerse themselves in their college experience. Further, a map outlining the physical accessibility of campuses should be provided to students in wheelchairs for their convenience.
6. Encouraging college-sponsored social life. Multiple students noted that orientation groups, freshman dorms, and Greek Life were helpful in forging friendships. Thus, prioritizing and emphasizing these opportunities to students, such as being particularly thoughtful in pairing for orientation groups and dorm-mates will offer critical support to students in wheelchairs.
7. Creating a guide for students with physical disabilities including a map of physical access, accessible transportation options, resources for finding care, recommended social opportunities, contact information with disability office resources.

This research supports the facts that students with physical disabilities are committed to pursuing higher education and can thrive when adequately supported, offering institutions of higher education a unique opportunity to intervene in a way that promotes equity. Colleges and universities can offer students with physical disabilities equal opportunities to their non-disabled peers through straightforward support systems in a way that mirrors support already made towards other student groups—such as offering financial aid to low-income students in order to remove the burden of financing education in the college decision-making process. Ultimately,

institutions of higher education have the opportunity to create a system in which the decision to attend college for students with physical disabilities is not driven by access issues—financial, social, physical—but rather, driven by a student’s academic aspirations that their non-disabled peers enjoy. Taking advantage of this opportunity can position universities and colleges to be leaders in promoting equity and closing the gap of achievement that continues to exist between students with and without physical disabilities.

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**Gatekept: How America Has Failed At-Risk, Diverse, Low-Scoring Students Through the  
Use of Standardized Testing**

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**Abstract**

For at-risk diverse students who score lower points on district/state/federal testing as well as on other standardized tests such as the SAT, (formerly known as the Scholastic Assessment Test), these students are gatekept out of higher-level courses in high school due to “teaching to the test” policies, gatekept out of entrance to expensive “test-prep” tutoring options, are examined unfairly by college admission offices under “test-optional” policies, and may ultimately be denied to better colleges. Consequently, given the current district/state/federal mandated testing systems in the United States and the stubbornness of high school administrators, state and federal lawmakers, school boards, college admission boards, etc., cling to antiquated practices of “college readiness” testing such as the SAT and favoring a classification system that reduces students to an invalid and static numeric answer instead of a fluid holistic representation is not only a travesty, but it is an unfair and biased system that needs to be reevaluated and reconstructed. Importantly, in the 21<sup>st</sup> century, there are better, more accurate, more comprehensive ways of showcasing student learning by way of the theory of multiple intelligence (Gardner, 1983), augmented theory of successful intelligence (Sternberg, 2012; 2015), and non-cognitive and critical thinking skills (Martin-Raugh et al., 2022).

*Keywords:* standardized testing, test-prep, test-optional, teaching to the test, multiple intelligence theory

What if their whole life was based on a lie or a series of lies? What if going through elementary, middle, and high school you were placed in lower-level courses and prevented from taking higher level courses that would have had a dramatic effect on your personal growth? What if on high stakes standardized tests, your entire future was unfairly and unjustly decided and was based on a lie that insisted in black and white numbers on the page that you were less intelligent. Consequently, it must feel awful to be locked out of education and out of life.

In this paper, I examine the impact of standardized test-taking practices on diverse low-scoring students, explain why standardized tests give false information about test-takers, and explore how these scores have a severe impact on these students' entire lives. The method that I use for my descriptive research study involves a critical review of the current literature on standardized test-taking practices and outcomes. My rationale for this study is to present empirically based research on why at-risk, diverse, low-scoring students are being oppressed in education today so that educators, parents, and policy-makers can better understand why this is happening so that meaningful changes to the current biased system can be made.

### **Theoretical Frameworks**

The four theoretical frameworks through which I build a case of how America has failed its diverse at-risk students through standardized testing can be viewed through the conception of the following practices/theories: (a) socio-cultural theory (Vygotsky, 1978), (b) test bias (Sternberg, 2015; McCarthy et al., 2023), (c) multiple Intelligence theory (Gardner, 1983, 1993), and (d) self-efficacy theory (Bandura, 1977, 1986, 1997).

My first framework is sociocultural theory, which was theorized by Lev Vygotsky in 1978 as a result of studying how children grow and develop in literacy. Among many important breakthroughs in the educational/psychological field, Vygotsky discovered that from a very young age, children learn about their world collectively through social and cultural avenues that are not independent streets that have no connection to each other, but that are more like collectively flowing veins that bring ideas, experiences, backgrounds, culture, and connection together all at once to make meaning (Vygotsky, 1978). In this way, the actual nature of literacy is comprised of these very connections that cannot be separated from each other nor ignored. Therefore, when diverse at-risk students undertake a standardized test that has been developed by White, higher income, standard English-speaking members of the dominant society, then those tests are made for and by those homogenous images ignoring the other ethnic groups' social and cultural fabrics on the test and thereby making them more likely to fail.

Second, test bias serves as another important theoretical framework through which to understand how standardized tests are failing marginalized students. Like Vygotsky (1978), both Sternberg (2015) and McCarthy et al. (2023) maintained that standardized testing is the very representation of the dominant society's cultural and socioeconomic norms, negating the norms of other ethnic groups, which may render standardized tests ineffective and invalid. For example, the design of the tests by the test-makers and the taking of the tests by the test-takers when both are comprised of the same backgrounds gives a major advantage to these homogeneous test-takers and consequently has the opposite effect on the other ethnic groups of society who do not share those same norms of culture nor income level (Canché et al., 2025). Further, Sternberg (2015) heavily criticized standardized testing for only addressing analytical skills which are prized by the dominant culture to the exclusion of practical, creative, and wisdom-based skills

which would showcase students' talents holistically. While Sternberg (2015) centered more on the breadth of genres largely ignored by the dominant culture, McCarthy et al. (2023) centered on the depth of those abilities as they apply to the acquisition of language skills. Importantly, McCarthy et al. (2023) discussed the lack of multicultural and linguistic differences that non-native speakers of English face when tested on flat text as it appears on standardized tests because reading prosody is developed through social and cultural means that may not be recognized as the powerful tools of knowledge that they are, especially when standardized testing only reflects a monolithic mindset excluding the connections that need to be strengthened through dwelling in both the native and non-native language of the test-taker in order for reading prosody to occur.

My third theoretical framework, Howard Gardner's (1983, 1993) multiple intelligence (MI) theory, represents my ideology towards viewing standardized tests as inaccurate, harmful, and incomplete portrayals of all standardized test-takers, but especially for marginalized test-takers. Gardner, through his vast body of work concerning what constitutes intelligence theorized that there is no *g* factor when classifying what intelligence embodies. Importantly, Gardner does not believe in the traditionally peddled and narrowly fixated opinion that intelligence somehow is present from birth and spans three areas: verbal, mathematical, and spatial. Instead, Gardner believes that every person has, to some degree, not only those three aforementioned intelligences, but they have at least six more intelligences—naturalist, musical, existential, kinesthetic, intrapersonal, and interpersonal—which are discounted and disregarded by the dominant group in power through standardized testing because these six additional intelligences present intelligence in a holistic way that cannot be captured, bottled, and labeled with numbers. In fact, by using Gardner's theory of intelligence, all standardized tests as we know them would

be defunct. The test-making-taking machine would leave those in power over how to categorize, sort, and reduce students to comforting numbers on a page, over one-billion dollars poorer and conversely would return that money to showcasing an entire picture of each individual student that champions all of their abilities rather than only some of them. Importantly, all student test-takers, and especially at-risk diverse students, are being disadvantaged and stymied through an unfair standardized testing system that does not recognize how their specific cultural and social backgrounds contribute to the development of these nine intelligences.

My fourth theoretical framework sits within the body of research by Albert Bandura (1977, 1986, 1997) and his self-efficacy theory. Bandura (1986) theorized that the self-perceived abilities, mindsets, and attitudes of students contribute greatly to their success or failure of set-tasks and performances on standardized tests. If marginalized students from lower-income and poorer school districts do not see standardized testing as representative of themselves and their capabilities then this belief will widen the chasm even further by anchoring their scoring on these exams to incorrect ideas of lower self-worth and performance. In this way, marginalized students see themselves only through the lens of how those who are in power see them, and an unnecessary self-fulfilling prophecy is unjustly allowed to continue in America today when all the while those in the dominant norm exhibit ignorance, willfulness, and act only in self-interest to retain power by continuing to require biased, inaccurate, and unfair standardized testing that is only designed to maintain power and depress the power of other American ethnic groups (McCarthy et al., 2023; Sternberg, 2015).

### **Literature Review**

My aim is to show how standardized tests are biased against at-risk, diverse students and that these tests are presented as intelligence tests that are then used by schools and the state and

federal governments to categorize and label students in the narrowest of ways instead of employing other viable methods that have proven to be effective with diverse students to explore practical skills, creativity, wisdom, and knowledge instead of using the present biased system that only recognizes verbal and analytical skills as those skills that signify intelligence.

The analysis of my literature review can be situated within six important areas connected to my theoretical frameworks:

- Bias in standardized testing
- Detrimental “teaching to the test” practices
- Exclusive “test-prep” access
- Harmful “test-optional” policies
- Negative impact of stress and anxiety on test takers
- Better methods for showcasing student knowledge, creativity, and skills

Each of these six elements of standardized testing set up at-risk, diverse, low-scoring students to be misidentified as lacking, unintelligent, untalented, and/or otherwise unworthy of achieving at a high level of education at the K–12 levels or in higher education. (Robinson & Robinson, 2022). Once students are given these inappropriate labels, they are deemed to be intellectually and socially out of the norm (e.g., disabled, limited in ability) and, thus are left behind in their classes intellectually (e.g., given lower-level and less stimulating curricula) and socially (e.g., ostracized by their peers). This, of course, leads to widening the gap between these students and their so-called normal peers each year of school (Armstrong, 2012).

### **Bias in Standardized Testing**

Standardized tests have the test-takers believing that they are, as students and people, equal to the number that is stamped onto the score report. If that score is low, then school

personnel, other students see these low scoring students—and students may see themselves—as unintelligent or “abnormal” (Armstrong, 2012). Yet, Sternberg (2015) through his successful intelligence theory, and Aguayo et al. (2021), through the use of multiple intelligence theory postulated that standardized tests only address two (i.e., verbal and mathematical) of the nine known intelligences, ignoring wisdom and creative and practical skills in favor of only analytical skills (Sternberg, 2015). Further, standardized tests such as the SAT, (formerly the Scholastic Assessment Test), ignore the backgrounds of at-risk, diverse learners and favor those of White Eurocentric students giving the illusion that the tests are measuring what is important (McCarthy et al., 2023; Tierney & Pearson, 2021). Specifically, a major problem—of the past and of today—that exists in standardized testing is its exclusive use of academic English, which is biased towards White and middle and upper-class students, rather than the incorporations of other dialects and language backgrounds of at-risk diverse students. Even though all dialects are deemed equal, linguistically-speaking, there is still the upholding of academic English as being more acceptable and more advanced (Breland, 2025; MacSwan, 2018).

Additionally, Santelices and Wilson (2010) found that after retesting Freedle’s (2003) scoring method on the verbal section of the SAT, the verbal section favored White Eurocentric test-takers and disenfranchised African American test-takers.

Importantly, the *2023 College Board SAT Suite of Assessments Annual Report* demonstrated how far fewer White students are scoring lower scores on the SAT as compared to at-risk diverse students. Specifically, for all high school students who graduated in 2023 who took the SAT and scored under 1,000 points, these were the results reported by race: White students, 34%; Two or More Races, 35%; Black students, 71%; Hispanic students, 64%; Asian students, 17%; Native Hawaiian students, 68%; and Native American Indian students, 73%

(College Board, 2023, p. 7). Bleakly, nationally, data compiled by the 2018 *Brown Center Report on American Education: How Well Are American Students Learning* (Quintero et al., 2018), also showed gaps between diverse students and their White peers.

Now, colleges, that have implemented other ways (than testing) to develop their student population, are under attack by the federal government and other groups as discriminating against White students. In this way, at-risk diverse students who score lower points on standardized tests like the SAT could be gatekept out of more competitive colleges that seek students with higher SAT scores. Additionally, these students may decide to not even apply to college as a result of their lower test scores and, in all likelihood, their lower sense of confidence and self-esteem (Dodge, 2009; Kearns, 2011).

### **Detrimental “Teaching to the Test” Practices**

“Teaching to the test” is a detrimental practice because it oppresses at-risk diverse students. Specifically, these students are gatekept out of higher-level courses because they have scored lower on standardized tests and are forced by the school system to take and retake courses that will “teach to the test.” Historically, when the federal government passed the No Child Left Behind Act (NCLB, 2001), the Common Core State Standards Act (CCSS, 2010), and the Every Student Succeeds Act (ESSA, 2015), the premise was well-intentioned: Keep striving to provide a better and equal education for all students.

Ostensibly, the latter act, ESSA (2015), has come the closest to making this governmental premise a reality by not just providing the promise of an equal education, but by providing one that is more inclusive for all students (Midgette, 2025). However, the outcome for many at-risk, diverse students is far from good. By placing school districts and students into strict categories of what is deemed as acceptable scoring brackets, the federal government has set up meaningless

parameters which hold students and school districts accountable for student test-performance. And, if students do not score well on these tests, then the government can withhold funding for that school district (Moje et al., 2020).

Therein lies the problem. Many lower-scoring students are diverse learners who are then placed together in lower-level courses that are designed to “teach to the test” where these students stay on a perpetual “merry-go-round” loop where they are learning only the material that is required for the test—even if that takes the entire school year—or years—to do so. This practice comes at the expense of at-risk diverse students gaining access to higher-level classes such as advanced placement (AP) and honors courses where their critical and creative thinking skills would be greater exercised instead of atrophied.

Particularly, Rubel (2011) found that due to New York State testing laws that required high school students to pass certain math tests in order to graduate from high school, many lower-scoring students were placed in classes where for 4 years, the highest math level that they were allowed to complete was Algebra I. Similarly, Ramsay-Jordan (2020) found that because the math curriculum of Georgia was so narrowly focused on standardized testing that preservice secondary school math teachers were only able to “teach to the test,” instead of being able to leverage their predominantly Black students’ backgrounds using culturally responsive teaching practices, which would have strengthened their students’ success in class and broadened their knowledge of math.

Therefore, the practice of the federal government providing unequal funding to schools based on standardized test-performance creates unequal environments for at-risk diverse learners due to lack of invested money in lower socio-economic status school districts which leads to inequalities between poorer and richer schools, with poorer schools paying the price (Ramsay-

Jordan, 2020). Ultimately, “teaching to the test” leads to significant restrictions for at risk diverse students regarding the broader curriculum and leads to greater student drop out/push out rates (Leistyna, 2007).

### **Exclusive “Test-Prep” Access**

Standardized testing is a billion-dollar industry in the United States (Ujifusa, 2021; Williams, 2024). Because tests like the SAT are so astronomically important to students—and their parents—wanting to gain entry to the best colleges, hundreds of millions of dollars are spent on test-preparation programs by parents from higher socioeconomic backgrounds who can afford these “test prep” tutoring programs that give predominantly White students a major advantage over their at-risk, diverse peers (Leistyna, 2007). But it is not just at the high school level where White students are excelling. Students from higher socioeconomic environments are outperforming their lower socioeconomic status peers from birth to grade three and onward unless specific intervention strategies are employed (D’Angiulli et al., 2004).

Perhaps the most striking finding regarding which conditions greatly affect students’ literacy development is the fact that “access to print” (e.g., books, magazines) in these following four ways: in the home; in the students’ community setting; in the students’ town libraries; and in the students’ schools was staggeringly less abundant in the environments of students from lower socioeconomic settings (Neuman & Celano, 2001). Indeed, the students’ social environment—from the micro-system (of the home environment) to the macro-system (of the larger cultural group setting) has a significant impact on how students make sense of and gain information about their world (Bronfenbrenner, 1979, as cited in Neuman & Celano, 2001).

Crucially, at-risk, diverse students are stymied not through personal shortcomings or capabilities that poverty and social inequality might wrongly imply, but poverty and social

inequality occur because these students are being shut out of the very institutions that would give them similar advantages to their higher-income peers (Bronfenbrenner, 1979, 2005, 2009, as cited in Kromydas, 2017). For example, even though the rates of Black and Hispanic students in college enrollment have risen over the years, there is still a significant gap nationwide where almost twice as many White students earn college degrees than Black students do, and where White students earn college degrees at almost three times the rate of Hispanic students (Sturm et al., 2011).

“Test-prep,” therefore, has a very long-reaching arm that stretches from the point of gaining access to expensive SAT tutoring, for instance, all the way back to what affordances the students’ environment (home, community, school) has given them. “Test-prep,” then, can be seen as an exclusive phenomenon that skews in favor of White, higher socio-economic status students (Park & Becks, 2015; Sternberg, 2012).

### **Harmful “Test-Optional” Policies**

“Test-optional” policies hurt rather than help at-risk, diverse, low-scoring students seeking entrance into college (Belasco et al., 2014). In order to understand why this is true, it is necessary to understand that “test-optional” policies do just the opposite: They boost colleges’ standings. “Test-optional” policies enormously help colleges to advance their national rankings, while colleges simultaneously and unfairly scrutinize the educational institutions of at-risk diverse students. Specifically, when colleges offer “test-optional” policies, lower-scoring students do not submit their test scores. In this way, the colleges can then report that the students who attend their colleges are performing in a higher bracket of SAT scores, which results in those colleges looking more desirable and improving their standing in the *U.S. News and World Report* and other journalistic rankings of colleges (Belasco et al., 2014).

Additionally, Belasco et al., (2014) found that it was even harder for lower-scoring diverse students to get admitted to colleges because if these students chose not to submit their test scores, then the admission offices of the colleges that they had applied to would more closely scrutinize their high school's curriculum and extra-curricular activities. But, for many diverse low-scorers of standardized tests, their school districts do not offer an extensive array of upper-level courses, nor do they have an abundance of extra-curricular activities to offer their students. So, these students are viewed less-favorably in the admission process. Consequently, these at-risk, diverse, low-scoring students are then in jeopardy of not being accepted to competitive colleges (Sternberg, 2015).

### **Negative Impact of Stress and Anxiety on Test Takers**

In their study, "Teacher and parent views on standardized testing: A cross-cultural comparison of the uses and influencing factors," Donegan and Trepanier-Street (1998) surveyed the views of Middle Eastern and White parents and White teachers about the use of and experience with standardized testing. While many parents reported that their children did not experience much stress and anxiety over these tests, all of the teachers had reported experiencing "considerable personal stress" especially within the upper elementary grades (p. 92). Essentially, most teachers reported that they had observed at times visible stress in their standardized test-taking students in the form of acting out or crying as these students progressed through their elementary school years.

Likewise, in her qualitative study "High-stakes standardized testing and marginalized youth: An examination of the impact on those who fail," Laura-Lee Kearns (2011) examined the damaging impact standardized test-taking had the mindset of marginalized Canadian secondary school students when they failed the exam, producing within them a sense of personal shame and

humiliation over the results (pp. 118–122). Similarly, in their quantitative study, “The relations among mathematics anxiety, gender, and standardized test performance,” Anis et al. (2016) found that those test-takers who had reported higher levels of text-anxiety had scored significantly lower scores on the SAT than those test-takers who had reported lower levels of text-anxiety.

Through examining this issue of anxiety and stress over taking standardized tests, it has become evident that there is not an overwhelming amount of research on this topic. However, since my area of interest also concerns the negative self-image of low-scoring test-takers, more studies—perhaps qualitative ones, like narrative and ethnographic inquiries (Johnson, 2021)—need to be conducted to really understand how diverse, low-scoring, test-takers feel about themselves and the system to which they are being subjected to which entraps them in a hard-to-break cycle of pressure to excel on these biased standardized tests and gatekeeps them out of going to college or out of going to a more desirable college—either pathway of which would have a profound impact on these students lives. Specifically, in her ethnography, *Misplaced Blame, Decades of Failing Schools, Their Children, and Their Teachers*, Bonnie Johnson (2021) addressed these issues. She examined how the specter of the potential loss of federal funding leads to a single-minded focus on teaching to the standardized test at the exclusion of all else. The subsequent anxiety and stress affect the marginalized students, their teachers, and their districts, and ultimately causes harm in spite of whatever positive intent these policies originally held.

### **Better Methods for Showcasing Student Knowledge, Creativity, & Skills**

Several highly regarded researchers who shaped the field of multiple intelligences are Dr. Howard Gardner (1983, 1993), Dr. Robert J. Sternberg (2015), and Dr. Carol Dweck (2006,

2016, 2022). These researchers have helped provide enormous insight into how we as people can view intelligence not only in the traditional realms of math and verbal abilities, but in other more advanced and holistic ways.

In reviewing Harvard professor Dr. Howard Gardner's (1983, 1984, 1993) work on his theory of multiple intelligences (MI), it is clear that Gardner sees intelligence not as having a singular component, but as one in which many different intelligences are involved, including these nine: visual-spatial, verbal-linguistic, musical-rhythmic, logical-mathematical, interpersonal, intrapersonal, naturalistic, bodily-kinesthetic, and existential. Moreover, Aguayo et al. (2021), in their research on infusing MI into students' classrooms, produced the result that "significant differences were found between the EG (experimental group) and the CG (control group), with the EG obtaining a higher mean in the variables analyzed in favour of the EG" (p. 1). Aguayo et al. (2021) indicated that students displayed more creative and higher-level thinking and products.

Professor and psychologist, Dr. Robert J. Sternberg, has been a leader in the philosophy of multiple intelligence theories from his work over the years of 1988–2015 regarding his augmented theory of successful intelligence which involves being able to perform through creative skills (using novel ideas), analytical skills (assessing self-performance), practical skills (ability to put ideas into working order), and wisdom-based skills (self-assessing ideas as good) (Sternberg, 2015).

Further, Sternberg (2012), through the Rainbow Project, a study that introduced creative and practical thinking skills along with analytical skills into the college application process—not affecting admission decisions—and found that it "reduced ethnic-group differences by a substantial amount—those differences were considerably less than they are on the SAT. Thus,

we increased prediction at the same time that we decreased differences due to ethnicity. This is not a common result” (p. 8).

Similarly, in Sternberg’s (2012) Advanced Placement Project study, creative and practical thinking skills were inserted into AP tests in psychology, statistics, and physics. Sternberg found, “We were able to increase construct validity and reduce ethnic-group differences. When we got these promising results, that funding ended as well” (p. 8).

Finally, Sternberg (2012) found through his action research study, the Kaleidoscope Project, where college admission decisions, this time at Tufts University, were based on the open-ended test questions collected from his study, that his students’ scores on this voluntary admission test showed “no ethnic-group differences, a result stronger than we had obtained with Rainbow” (p. 10). Sternberg ethically mentioned that he did not know whether his results were impacted by the fact that the test scorers did not know the ethnicity of test takers in the Rainbow Project study, whereas test scorers did know the ethnicity of test takers in the Kaleidoscope Project (Sternberg, 2012). However, it is important to also note that the number of applications rose from the population of at-risk diverse students at Tufts University during the years 2005–2010 of Sternberg’s studies.

Furthermore, psychologist and professor, Dr. Carol Dweck (2006, 2016), is noted for her work on fixed versus growth mindset. In her book, *Mindset: The New Psychology of Success* (2006, 2016), Dweck posited that having a growth mindset fosters growth and success because it challenges the person to see their abilities as being fluid rather than fixed. In this way, growth occurs when abilities are focused on and stretched through experience.

Through the work of these aforementioned specialists in the field of multiple intelligences (MI), it can be understood that there is more to a person’s overall composition than

just their mathematical and verbal/reading abilities. While attempting to capture student intelligence in a bottle that can then be labeled and categorized as intelligence, standardized testing is harming not only how diverse low-performing students view themselves and of how the world sees them, but it confines intelligence to a single, unreliable approach, rather than as a genuine, multidimensional, holistic way to represent a person's intellectual abilities and characteristics.

Pace Miles and Fletcher (2021) maintained that reading development does not happen in a linear and unidimensional fashion and that it is a fallacy that test makers and curriculum developers peddle to break reading skills into stacked and testable parts that may appear to be telling a story about the ability of the test-taker but instead show an inaccurate and flat picture of the reading competency of the test-taker as every reader has a depth, complexity, and uniqueness that cannot be distilled into simple stamped scores as a one-size-fits-all approach with which to judge all reading development.

Moreover, Sacks (1997) argued for "authentic" assessment such as "performance assessment" (p. 25). The author posited that students should be graded on what they are able to do and not on how well they can take a test. Other ways to assess student learning could include portfolios, art and science projects, and writing collections.

In moving forward and finding better ways to display student growth and multifaceted intelligence, two studies showed promising results. First, Mahlangu (2019) concluded that colleges should be using capabilities approach to its admission criteria instead of relying on defunct standardized testing because there are many more important factors to consider when admitting students into higher education such as their personal qualities, how well they learn, how well they perform at tasks, and what life skills they are competent in (p. 183).

Similarly, Martin-Raugh et al., (2022) demonstrated in their study that noncognitive skills and critical thinking skills predict college GPA and that colleges and universities should highly consider these skills as part of their admission decision-making process rather than depending on biased and inconclusive standardized tests such as the SAT (p. 350).

### **Conclusions**

In conclusion, what I believe is America's wrong and rigid objective of labeling students and categorizing them in tiers of lower to higher intelligence based on the numerical results stamped onto biased standardized test reports needs to change. In its current state, I firmly believe this process oppresses at-risk, diverse, low-scoring students and seeks to gatekeep them into lower-level classes and lower-level colleges, all the while undermining students' confidence and catering to these students' potentially negative images of themselves.

Because standardized-testing is a major money-making machine in the United States with the SAT enriching test-preparation and test-manufacturing companies, and with state and federal policies in place that can withhold funding from underperforming districts unless they meet arbitrary scoring brackets, from my experiences and observations in schools, I have found a biased, unjust, and unfair system has been pushed for decades that favors and caters to the White Eurocentric population.

In a myriad of ways, standardized tests negatively and unfairly gatekeep the lives of at-risk, diverse, lower-scoring students due to these findings:

1. Standardized tests are biased.
2. Teaching to the test is detrimental.
3. Test-Prep access is exclusive.
4. Test-Optional policies are harmful.

5. Stress and anxiety negatively impact test takers.
6. Better methods of assessment can demonstrate knowledge, creativity, and skills.

If this oppression of diverse, low-scoring, standardized test-takers is to be banished, more research, more open-minded lawmakers, and more honesty is needed to remedy the wrongs that continue to plague and have a serious impact on the outcome of these students' lives (Moje et al., 2020; Tierney & Pearson, 2021).

If we genuinely want to make education equal and equitable for all students, we have to go a step further and make it inclusive to all students of all backgrounds and ethnicities (Midgette, 2025). However, if we continue to use standardized testing as it is currently designed and used in our school systems today, we are continuing to perpetuate social injustices that are based on biased exams that are used inaccurately as intelligence tests that seek to oppress at-risk diverse students in all aspects of their lives—and in their livelihoods (Johnson, 2021; Midgette, 2025; Sacks, 1997; Sternberg, 2012).

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